



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southeast District - Annex building

Post Office Box 12436

4041 N. Richards St.

Milwaukee, Wisconsin 53212

TELEPHONE: 414-961-2727

TELEFAX #: 414-961-2770

George E. Meyer
Secretary

September 20, 1994

File Ref: 3040/4489
FID#: 241149260/241174780

ERR LUST

Don Roettgers
Roettgers Bulk Oil
5169 N. 37th Street
Milwaukee, WI 53209

Re: SITE CLOSURE and PECFA REIMBURSEMENT (Claim #s 53209-4603-09 and 53209-4603-10) at Roettgers' Oil Company 5169 N. 37th Street, Milwaukee, WI.

Dear Mr. Roettgers:

The Wisconsin Department of Natural Resources (WDNR) has reviewed the case files for the above referenced site. The files includes reports and letters submitted by Advent Environmental Services, Inc. The files contain information regarding the excavation and removal of several underground storage tanks from the site and the subsequent over-excavation of petroleum impacted soil.

Note: This letter addresses two separate remediations on the same property. (One remediation is for soils impacted by leaking underground petroleum storage tanks and the other is for soils impacted by a leaking waste oil tank. This is the reason for duplicate Fid #s, File reference #s and PECFA Claim #s.)

Summary

2118.99 tons of petroleum impacted soil were excavated in April 1994.

75.4 tons of waste oil impacted soil were excavated on June 21, 1994 and July 6, 1994.

Based on the information provided, we are not requiring further investigation or any other action in connection with the site at this time. Although contamination levels in excedence of WDNR Soil Cleanup Guidelines remain on site (benzene @480 ppb under sidewalk), the volume of contaminated soil does not justify placing a restriction on the deed of the property. In the event that the soils, which were found to be inaccessible by your consultant, Advent Environmental Services, Inc., become accessible in the future, the owner of the property would be responsible for managing the soils according to all applicable WDNR regulations and standards.

The WDNR signed one Form 4 for reimbursement under the State's Petroleum Environmental Cleanup Fund (PECFA) program for each of the two remedial actions. The Form 4s are signed for "Completed Remedial Action" and are enclosed. Please forward the white copies of the Form 4 and a copy of this

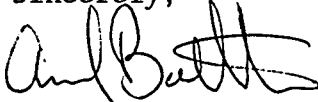
letter to the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) with your completed claim.

In accordance with the provisions of PECFA, evidence of a hazardous substance release was reported to the WDNR on January 24, 1993 as required in s.144.76(2) Wisconsin Statutes. The activities performed at the site were not performed by the WDNR using federal LUST Trust funding (42 USC 6991). No enforcement action has been necessary at this site.

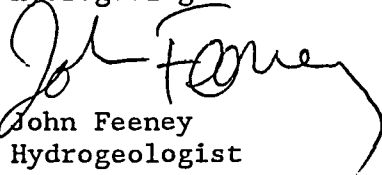
You should note that this letter does not constitute Department "certification" under s. 144.765 (2) (a) 3, Stats., as created by 1993 Wisconsin Act 453 (May 12, 1994). Persons who meet the definition of "purchaser" in s. 144.765 (1) (c) must receive Department pre-approval prior to conducting a site investigation in order to be eligible for the liability exemption under s. 144.765, Stats.

The WDNR appreciates the actions you have taken to restore the environment at this site. If you have any questions, you may contact me at 961-2774.

Sincerely,



Andrew Boettcher
Hydrogeologist



John Feeney
Hydrogeologist

c: Advent Environmental Services, Inc.
SED Case File
Joan Schmaus, PECFA Program, WDILHR

enclosure: PECFA Form 4

**DNR SITE INVESTIGATION AND
REMEDIAL ACTION PLAN REVIEW**

Section 101.143 (3) (c) 4, Wis. Stats., requires that a claimant obtain written approval from the Department of Natural Resources (DNR) when requesting reimbursement for activities in response to a discharge from a commercial petroleum product storage system or home oil tank. The DNR approval must indicate that the site investigation and remedial action plan is adequate to meet requirements of s. 144.76, Wis. Stats. The DNR approval is created for the purpose of meeting the requirements of s. 101.143 (3), Wis. Stats., only and does not bar the DNR from requiring that additional investigation and/or remediation activities be performed by persons responsible under s. 144.76, Wis. Stats.

DNR Use Only

Any DNR / DOJ Enforcement Action(s) or DNR LUST Trust Expenditures on this site? ☐ Yes ☐ No

If answer is yes, please provide pertinent details on attached sheet.

Claimant's Name Roettgers Oil Company	Remedial Action Site Name (if business) Roettgers, Villard
Street Address 5169 N. 37th Street	Remedial Action Site Address 3709 W. Villard Avenue
City, State, Zip Code Milwaukee, WI 53209	City, State, Zip Code Milwaukee, WI 53209-4603-09
Claimant's Telephone Number (414) 466-0890	Telephone Number of Site ()

Claimant is

☒ Owner ☐ Operator ☐ Other - please specify:

Approval requested for: ☒ Petroleum Product Storage System ☐ Home Oil Tank System ☐ Aboveground

FOR DNR USE ONLY (Indicate Whether Completed Remedial Action or Other Action(s))

A copy of this completed document must be submitted to DNR for approval of initial activities (emergency action, site investigation and remediation) in accordance with s. 101.143 (3) (c) 4, Wis. Stats.

☒ Completed Remedial Action (complete cleanup and single claim for reimbursement) (Steps 1 through 3)

Progress Payments For:

☐ Emergency Action (Step 1 - check only if emergency action was performed)

☐ Completion of Site Investigation (Step 1) and Proposed Remedial Action Plan (Step 2)

☐ Remedial Action (Step 3)

☐ Operation/Maintenance and Environmental Monitoring (annual claim for remedial action activities) (Step 4)

☐ Site Investigation By Order of DNR And/Or DILHR - No Remedial Action

Check Appropriate
Box(es)

The DNR received a request for approval of the above identified activities for the site listed on this document on the following date _____

The DNR response for purposes of s. 101.143 (3), Wis. Stats., is attached.

Remedial action activities conducted by owners/operators are not eligible for funding under 42 USC 6991 (L.U.S.T. Funding). (See s. 101.143 (3) (a) 2., Wis. Stats.)

Send one copy of this completed form to the address shown in the upper right corner and one copy to the claimant.

Reviewer's Signature And Batt

Date Signed 9-21-94

Reviewer's Title Hydrogeologist

SEP 13 1994

ADVENT

ENVIRONMENTAL SERVICES, INC.

Mr. John Feeney
WDNR
P.O. Box 12436
Milwaukee, WI. 53212

Re: Landfill Disposal of Contaminated Soil from Roettgers Oil -Villard Ave. Gasoline site. Advent
Project Number 96804.

Dear Mr. Feeney:

Enclosed with this letter is the weight ticket summary from Parkview Landfill documenting the disposal of 2096.78 tons of petroleum impacted soil. The remediation activities that generated the soils for disposal was documented in a report submitted to you dated July 7, 1994. The weight ticket summary is an addendum to that report.

If you have any questions regarding this information, please call me at (414) 238-1874
ext.3009.

Sincerely,



Stephen G. Reuter C.P.G.
Senior Hydrogeologist
Advent Environmental Services Inc.

OM:
VIEW RDE
BOX 2105
DRB PARK, IL 60499-2105

INVOICE

ACCOUNT NUMBER 490496 LF 0004422
INVOICE NUMBER 000632
DATE 05/02/94

TO: PAGE 1 OF 3
ROETIGER'S OIL CO.
5169 N 37TH STREET
MILWAUKEE WI 53209

ING INQUIRIES: 414/253-8620

SERVICE INQUIRIES: 414/253-8620

U

DATE	REFERENCE NUMBR	QUANTITY	DESCRIPTION	AMOUNT
04/15			PREVIOUS BALANCE	29,545.31
04/27			PAYMENT RECEIVED	29,545.31CR
04/29	365018		\$2.00 PER TON DISCOUNT FOR APRIL	4,237.98CR
			BALANCE FORWARD	4,237.98CR
04/15	019181	17.65	CONTAMINATED SOIL	469.97
04/15	019187	18.22	CONTAMINATED SOIL	485.14
04/15	019189	20.51	CONTAMINATED SOIL	546.12
04/15	019196	18.85	CONTAMINATED SOIL	501.92
04/15	019205	18.00	CONTAMINATED SOIL	479.29
04/15	019212	19.59	CONTAMINATED SOIL	521.62
04/15	019220	18.36	CONTAMINATED SOIL	488.87
04/15	019223	17.03	CONTAMINATED SOIL	453.46
04/15	019226	21.67	CONTAMINATED SOIL	577.01
04/15	019230	18.29	CONTAMINATED SOIL	487.01
04/15	019231	16.52	CONTAMINATED SOIL	439.88
04/15	019241	21.34	CONTAMINATED SOIL	568.22
04/15	019256	19.35	CONTAMINATED SOIL	515.23
04/15	019275	18.93	CONTAMINATED SOIL	504.05
04/15	019283	20.97	CONTAMINATED SOIL	558.37
04/17	019530	18.98	CONTAMINATED SOIL	505.38
04/17	019535	21.96	CONTAMINATED SOIL	584.73
04/17	019542	18.03	CONTAMINATED SOIL	480.08
04/17	019544	24.09	CONTAMINATED SOIL	641.44
04/17	019552	17.86	CONTAMINATED SOIL	475.56
04/17	019568	17.55	CONTAMINATED SOIL	467.30
04/17	019572	21.59	CONTAMINATED SOIL	574.88
04/17	019577	20.43	CONTAMINATED SOIL	543.99
04/17	019605	19.91	CONTAMINATED SOIL	530.14
04/17	019610	20.60	CONTAMINATED SOIL	548.52

486.20

486.28

OM:
VIEW RDE
BOX 2105

INVOICE

ACCOUNT NUMBER 490496 LF 0004422
INVOICE NUMBER

TO: PAGE 2 OF 3
ROETIGER'S OIL CO.
5169 N 37TH STREET

INVOICE

TO:

PAGE 2 OF 3

ACCOUNT NUMBER 490496 LF 0004422
INVOICE NUMBER 000564
DATE 04/15/94

ROETIGER'S OIL CO.
5169 N 37TH STREET
MILWAUKEE WI 53209

DM:
VIEW PDF
000 2105
ORD PARK, IL 60499-2105

ING INQUIRIES: 414/253-8620

SERVICE INQUIRIES: 414/253-8620

U

DATE	REFERENCE NUMBER	QUANTITY	DESCRIPTION	AMOUNT
04/14	018807	17.85	CONTAMINATED SOIL	475.29
04/14	018810	16.91	CONTAMINATED SOIL	450.26
04/14	018815	16.65	CONTAMINATED SOIL	443.34
04/14	018816	17.81	CONTAMINATED SOIL	474.23
04/14	018827	19.23	CONTAMINATED SOIL	512.04
04/14	018832	18.48	CONTAMINATED SOIL	492.07
04/14	018833	17.08	CONTAMINATED SOIL	454.79
04/14	018839	22.93	CONTAMINATED SOIL	610.56
04/14	018844	16.76	CONTAMINATED SOIL	446.27
04/14	018847	19.04	CONTAMINATED SOIL	506.98
04/14	018851	20.05	CONTAMINATED SOIL	533.87
04/14	018856	17.52	CONTAMINATED SOIL	466.51
04/14	018859	19.32	CONTAMINATED SOIL	514.43
04/14	018872	23.51	CONTAMINATED SOIL	626.00
04/14	018882	15.52	CONTAMINATED SOIL	413.25
04/14	018891	21.23	CONTAMINATED SOIL	565.29
04/14	018897	20.13	CONTAMINATED SOIL	536.00
04/14	018900	21.05	CONTAMINATED SOIL	560.50
04/14	018904	18.43	CONTAMINATED SOIL	490.74
04/14	018917	21.10	CONTAMINATED SOIL	561.83
04/14	018918	19.70	CONTAMINATED SOIL	524.55
04/14	018924	18.45	CONTAMINATED SOIL	491.27
04/14	018931	19.47	CONTAMINATED SOIL	518.43
04/14	018932	19.74	CONTAMINATED SOIL	525.62
04/14	018940	16.04	CONTAMINATED SOIL	427.10
04/14	018943	24.39	CONTAMINATED SOIL	649.43
04/14	018950	18.11	CONTAMINATED SOIL	482.21
04/14	018958	21.84	CONTAMINATED SOIL	581.53
04/14	018967	21.36	CONTAMINATED SOIL	568.75
04/14	018984	19.49	CONTAMINATED SOIL	518.96

PLEASE RETURN THIS PORTION WITH PAYMENT

INVOICE DATE:
CURRENT CHARGES:
TOTAL DUE:

ACCOUNT NUMBER	AMOUNT PAID
INVOICE NUMBER	CHECK NUMBER

579.19

579.19

523.38

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508.01

2,096.78

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\$ 52,187.38

= 24.89 / ton

26.63

1234

Reg

INVOICE

FROM:
SEVIER RBF
1 BOX 2105
BORDO PARK, IL 60499-2105

ACCOUNT NUMBER 490496 LF 0004422
INVOICE NUMBER 000564
DATE 04/15/94

TO: PAGE 1 OF 3
ROETIGER'S OIL CO.
5169 N 37TH STREET
MILWAUKEE WI 53209

CALLING INQUIRIES: 414/253-8620

SERVICE INQUIRIES: 414/253-8620

U

DATE	REFERENCE NUMBER	QUANTITY	DESCRIPTION	AMOUNT
PREVIOUS BALANCE				0.00
04/13	018586	22.52	CONTAMINATED SOIL	599.64
04/13	018597	12.85	CONTAMINATED SOIL	342.16
04/13	018602	13.75	CONTAMINATED SOIL	366.12
04/13	018605	15.10	CONTAMINATED SOIL	402.07
04/13	018606	18.95	CONTAMINATED SOIL	504.58
04/13	018611	13.80	CONTAMINATED SOIL	367.45
04/13	018615	21.09	CONTAMINATED SOIL	561.56
04/13	018626	14.05	CONTAMINATED SOIL	374.11
04/13	018639	16.54	CONTAMINATED SOIL	440.41
04/13	018644	15.81	CONTAMINATED SOIL	420.97
04/13	018647	17.33	CONTAMINATED SOIL	461.45
04/13	018653	16.82	CONTAMINATED SOIL	447.87
04/13	018659	21.92	CONTAMINATED SOIL	583.66
04/13	018670	15.69	CONTAMINATED SOIL	417.78
04/13	018676	16.00	CONTAMINATED SOIL	426.03
04/13	018683	19.47	CONTAMINATED SOIL	518.43
04/13	018690	18.48	CONTAMINATED SOIL	492.07
04/13	018693	21.42	CONTAMINATED SOIL	570.35
04/13	018698	23.73	CONTAMINATED SOIL	631.86
04/13	018713	18.11	CONTAMINATED SOIL	482.21
04/13	018718	16.10	CONTAMINATED SOIL	428.69
04/13	018724	18.16	CONTAMINATED SOIL	483.55
04/13	018726	20.93	CONTAMINATED SOIL	557.30
04/13	018732	22.49	CONTAMINATED SOIL	598.84
04/13	018736	22.32	CONTAMINATED SOIL	594.31
04/14	018796	20.89	CONTAMINATED SOIL	556.24
04/14	018803	17.40	CONTAMINATED SOIL	463.31
04/14	018805	16.02	CONTAMINATED SOIL	426.56

508.01

707 507.74

INVOICE

TO:

PAGE 2 OF 3

ACCOUNT NUMBER
490496 LF 0004422

INVOICE NUMBER
000632

DATE
05/02/94

ROETIGER'S OIL CO.
5149 N 37TH STREET
MILWAUKEE WI 53209

END INQUIRIES: 414/253-8620

SERVICE INQUIRIES: 414/253-8620

U

DATE	REFERENCE NUMBER	QUANTITY	DESCRIPTION	AMOUNT
04/17	019620	17.96	CONTAMINATED SOIL	478.22
04/17	019628	18.86	CONTAMINATED SOIL	502.19
04/17	019635	18.71	CONTAMINATED SOIL	498.19
04/17	019653	19.66	CONTAMINATED SOIL	523.49
04/17	019673	20.06	CONTAMINATED SOIL	534.14
04/17	019678	17.17	CONTAMINATED SOIL	457.19
04/17	019681	20.36	CONTAMINATED SOIL	542.13
04/17	019684	18.00	CONTAMINATED SOIL	479.29
04/17	019689	16.92	CONTAMINATED SOIL	450.53
04/17	019706	20.46	CONTAMINATED SOIL	544.79
04/17	019720	17.89	CONTAMINATED SOIL	476.36
04/17	019726	17.41	CONTAMINATED SOIL	463.58
04/17	019731	18.73	CONTAMINATED SOIL	498.72
04/17	019741	17.66	CONTAMINATED SOIL	470.23
04/17	019761	19.69	CONTAMINATED SOIL	524.29
04/17	019767	17.91	CONTAMINATED SOIL	476.89
04/17	019780	19.17	CONTAMINATED SOIL	510.44
04/17	019784	18.48	CONTAMINATED SOIL	492.07
04/17	019793	17.50	CONTAMINATED SOIL	465.97
04/17	019806	16.14	CONTAMINATED SOIL	429.76
04/19	019894	22.15	CONTAMINATED SOIL	589.79
04/19	019910	19.01	CONTAMINATED SOIL	506.18
04/19	019911	22.77	CONTAMINATED SOIL	606.30
04/19	019918	20.32	CONTAMINATED SOIL	541.06
04/19	019921	23.34	CONTAMINATED SOIL	621.47
04/19	019926	19.03	CONTAMINATED SOIL	506.71
04/20	020275	3.18	CONTAMINATED SOIL	84.67
04/20	020306	2.66	CONTAMINATED SOIL	70.83
04/20	020323	19.32	CONTAMINATED SOIL	514.43
04/20	020333	2.59	CONTAMINATED SOIL	68.96

PLEASE RETURN THIS PORTION WITH PAYMENT

523.38

523.11

INVOICE DATE:
CURRENT CHARGES:
TOTAL DUE:

ACCOUNT NUMBER	AMOUNT PAID
INVOICE NUMBER	CHECK NUMBER

* PLEASE RETURN REMITTANCE ON PAGE 1 *

AUG 26 1994

Weiss
Berzowski
Brady &
Donahue

ATTORNEYS AT LAW

Robert M. Weiss
Michael M. Berzowski
John P. Brady
John E. Donahue
Scott B. Fleming
Sherwin C. Peltin
Randy S. Nelson
F. Patrick Matthews
Thomas L. Skalmoski
Amy R. Seibel
Debra A. Slater
David J. Roettgers
John A. Sikora

Alan Marcuvitz
Michael A. Gral
Melanie N. Aska
Andrea Roschke
Philip J. Miller
Michael L. O'Shaughnessy
Elizabeth A. Hardacre
Barry R. White
Gregory I. Devorkin
Michael G. Goller

August 2, 1994

Mr. Chip Krohn
Wisconsin Department of
Natural Resources
2300 North Martin Luther King Drive
P.O. Box 12436
Milwaukee, WI 53212

Re: Clean-Up located at 3709 West Villard Avenue - Milwaukee, WI

Dear Mr. Krohn:

This firm represents Roettgers Oil, Inc. with respect to the above site. Environmental reports and analysis have been filed with John Feeney of your office concerning this site. We are awaiting the approval of the site closure and a "no action letter." We have been told that it will take approximately two months to have this matter reviewed and for the issuance of a "no action letter."

Unfortunately, the "no action letter" is delaying a closing on the sale of the property. This property is located in an economically depressed area. As soon as the sale is completed, the buyer will begin upgrading the facility in hopes of quickly reopening the location, thereby helping the revival of this local community. As a result, we respectfully request that the property be reviewed as soon as possible in order to expedite the sale and begin the improvement of this inner city property.

If you have any questions, please do not hesitate to contact me.

Very truly yours,


David J. Roettgers

DJR/dln

cc: Mr. Don A. Roettgers

ADVENT

ENVIRONMENTAL SERVICES, INC.

May 24, 1994

Roettgers Oil Co.
5169 N. 37th Street
Milwaukee, WI 53209

Dear Mr. Roettgers:

I have enclosed the environmental remediation report for the Roettgers, Villard site, 3709 W. Villard Avenue, Milwaukee, Wisconsin. Advent recommends that the WDNR close the site. We will forward a copy of this report and the Petroleum Environmental Cleanup Fund Act (PECFA) Form 4 to the WDNR at the following address:

Mr. John Feeney
WDNR-Milwaukee Area Headquarters
P.O. Box 12436
Milwaukee, WI 53212

Advent will also include one copy of this report with the appropriate documentation when requesting reimbursement from PECFA for remedial activities.

Please call me at 238-1874 ext. 3018 if I can be of further service to you.

Sincerely,

ADVENT ENVIRONMENTAL SERVICES, INC.



Chris Kern, C.P.G.
Hydrogeologist

cak:jad

enclosure

Environmental Remediation

Roettgers, Villard

3709 W. Villard Avenue, Milwaukee, Wisconsin

Prepared for
Roettgers Oil Company

May 1994

A D V E N T

Environmental Services, Inc.
6100 W. Executive Drive, Suite E
Mequon, Wisconsin 53092
Advent Project No. 96804

Environmental Remediation

Roettgers, Villard

3709 W. Villard Avenue, Milwaukee, Wisconsin

Prepared By: Christian A. Kern
Christian A. Kern, C.P.G.
Hydrogeologist
AIPG Certificate No. 8834
Advent Environmental Services, Inc.

Date: 6/1/94



Reviewed By: Stephen G. Reuter, C.P.G.
Stephen G. Reuter, C.P.G.
Senior Hydrogeologist
AIPG Certificate No. 7836
Advent Environmental Services, Inc.

Date: 6/1/94

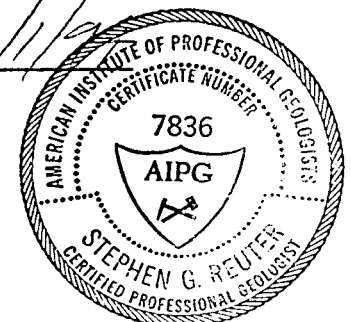


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Site Remediation

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3	Extent of Excavation and Floor/Wall Sample Locations	5

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A	Remedial Approval Documentation
B	Field Screening Results of Excavated Soil
C	Site Photographs
D	Standard Sampling Procedures and Chain of Custody Procedures
E	PID Calibration Documentation
F	Laboratory Results and Chain of Custody Documentation

Executive Summary

Advent Environmental Services has completed an environmental remediation for the Roettgers, Villard site at 3709 W. Villard Avenue, Milwaukee, Milwaukee County, Wisconsin. Roettgers Oil Company contracted Advent to excavate, transport, and dispose of gasoline-contaminated soil identified during an environmental assessment completed by Advent in March 1993. This remediation was conducted in April 1994.

Advent supervised the excavation and transportation of 2,118.99 tons of petroleum-contaminated soil to the Waste Management Parkview Landfill in Menomonee Falls, Wisconsin. We successfully removed the contaminated soil that could be excavated using standard techniques. Chemical analysis of soil samples collected from the walls and floor of the excavation indicate that all soil with gasoline range organic (GRO) concentrations exceeding the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) 10 parts per million (ppm) remedial action guideline has been removed from the Roettgers, Villard property. Contaminated soil located under the 37th Street right-of-way was not removed. The WDNR typically does not require that contaminated soil be removed if it threatens the integrity of city streets.

Groundwater was not encountered in the excavation, which reached a depth of 13 feet. In addition, groundwater was not encountered in soil borings completed in March 1993 at the site. Maximum depth of the borings was 50 feet.

Advent recommends no additional remediation at the site because the contaminated soil that can be excavated has been removed. Groundwater quality and human health are not threatened by the remaining impacted soil.

Purpose and Scope of Services

Roettgers Oil Company contracted Advent to remediate gasoline-impacted soil at the Roettgers, Villard site located at 3709 W. Villard Avenue, Milwaukee, Wisconsin, (NE¼, SW¼, Sec. 36, T.8N, R.21E) by excavation and landfill disposal (Figure 1).

Advent conducted field work for an environmental site assessment in July 1992 and March 1993. We completed 17 soil borings to determine the extent of contamination. We had the soil samples chemically analyzed to define the extent of contaminated soil (Figure 2). Groundwater was not encountered in borings, which reached a maximum depth of 50 feet. Please refer to the environmental assessment report completed by Advent in November 1993 for further details.

Advent determined that soil excavation and landfiling was the least expensive, WDNR- and PECFA-approved remediation option. See Appendix A for approval documentation.

To remediate the site, Advent performed the following services:

- Excavation and removal of petroleum-contaminated soil
- Field screening the excavated soils
- Backfilling the excavation with suitable fill material
- Chemical analysis of soil samples to confirm successful removal of impacted soil

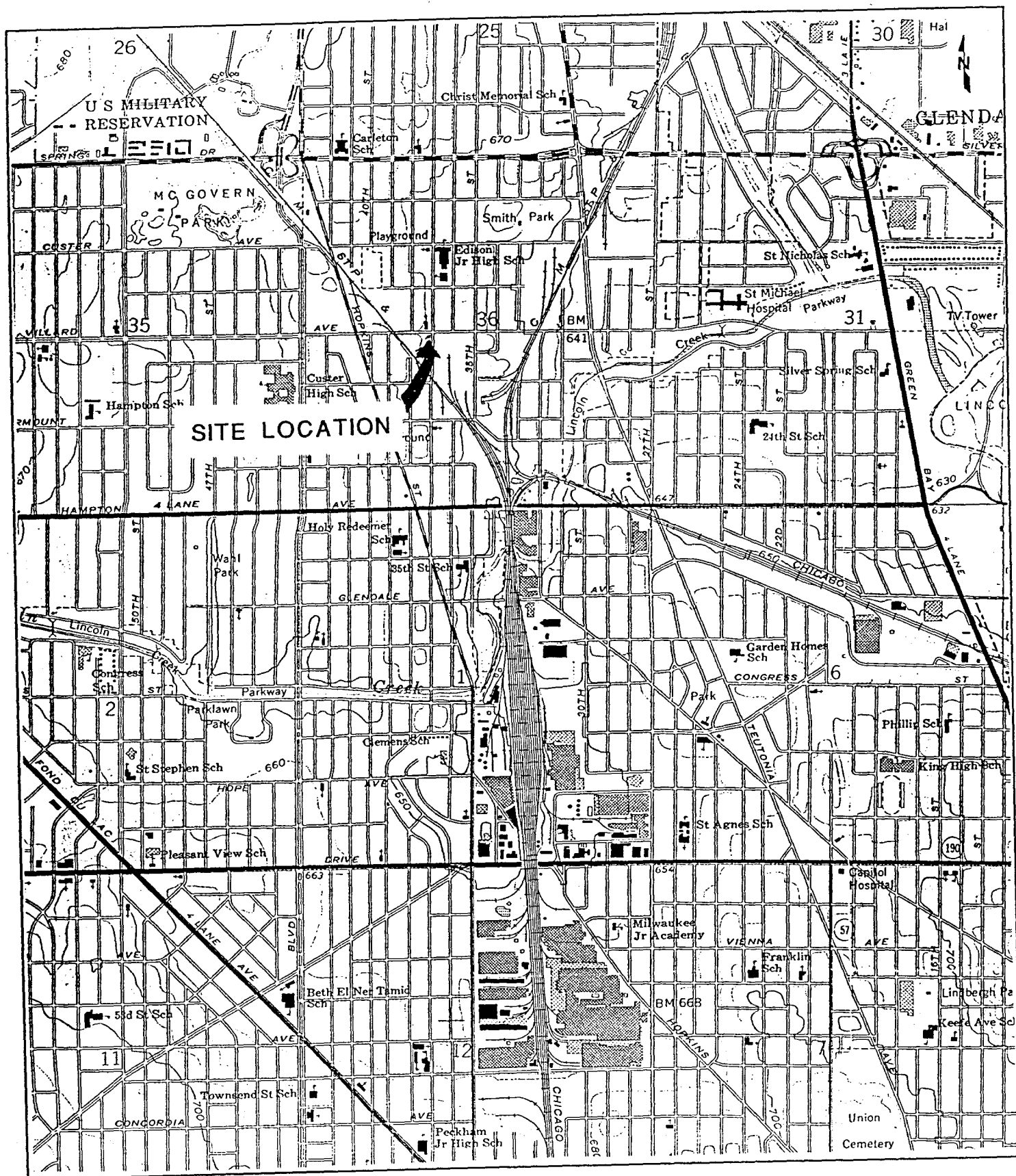


FIGURE 1 SITE LOCATION
37th AND VILLARD SITE
MILWAUKEE, WISCONSIN



A D V E N T
ENVIRONMENTAL SERVICES, INC.
AESI # 96804

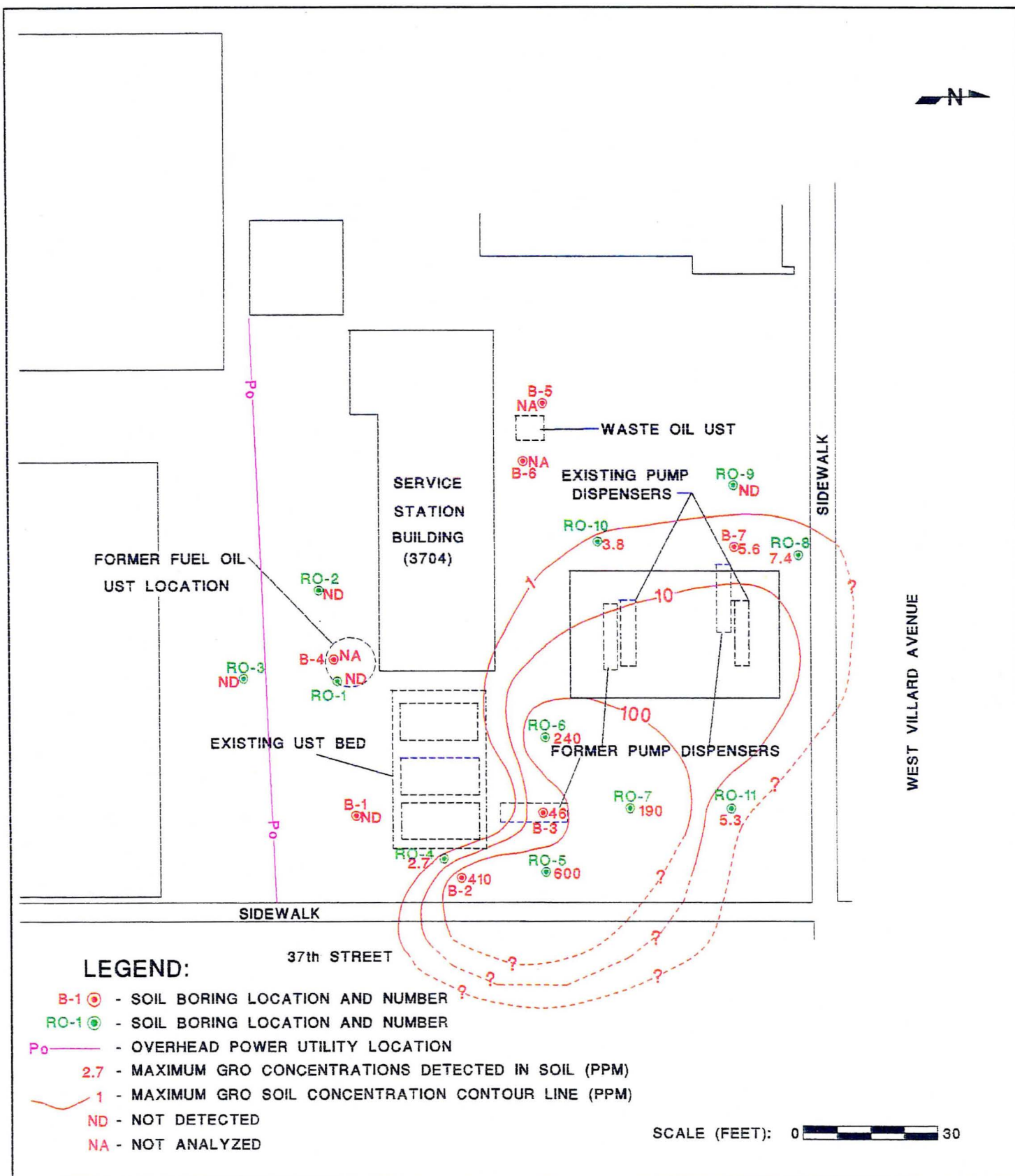


FIGURE 2 EXTENT OF GRO
CONTAMINATED SOIL (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN

A D V E N T
ENVIRONMENTAL SERVICES, INC.
DATE: 6/7/93
DRAWING # 96804CE

Soil Testing Methods

Soil Excavation and Field Screening Methods

Chris Kern of Advent supervised the excavation that began in the area adjacent to the existing UST bed and extended to the north and west. Excavation continued until field screening of the soil samples from the walls and floor of the excavation indicated a response of less than one ppm. The maximum final dimensions of the excavation were approximately 80 feet by 70 feet by 13 feet deep (see Figure 3).

Soil samples were field screened with a calibrated photoionization detector (PID) using the headspace method. Field screening responses of less than one ppm were used to define the excavation limits. The excavation reached a maximum depth of 13 feet before PID responses of less than one ppm were obtained.

Contaminated soil was encountered beneath the piping run from the UST bed to the pump islands. At the WDNR's request, the UST piping was removed to allow excavation of this soil. A large concrete foundation was encountered along the north side of the excavation east of the pump islands. The foundation was left in place and excavation wall samples were collected adjacent to it to document removal of impacted soil in this area.

To confirm removal of impacted soil, one soil sample was field screened for every 15 cubic yards of soil transported to the landfill. Field screening results are included in Appendix B. The soil was transported by Briohn Environmental, Inc., of Kenosha, Wisconsin, to the Parkview Landfill. Copies of the landfill manifests are included in Appendix A. Photographs of the excavation are provided in Appendix C.

Appendix D includes procedures for maintaining sample security, identification, and integrity, the procedures followed for collecting soil samples, procedures for field screening of samples, and chain of custody procedures. PID calibration documentation is included in Appendix E.

Sample Collection Methods

Advent collected 14 soil samples from the excavation walls and nine samples from the excavation floor for GRO and petroleum volatile organic compound (PVOC) analysis to confirm the removal of impacted soil. In addition, Advent collected six representative soil samples, one from each 300 cubic yards of excavated material, for GRO and PVOC analysis to confirm the disposal of contaminated soil.

Chemical Analyses of Soil Methods

Great Lakes Analytical, Buffalo Grove, Illinois, analyzed the soil samples collected at the Roettgers, Villard site for GROs and PVOCs. Analytical methods used are approved by the WDNR and are outlined in "LUST Analytical Guidance," April 1992. All GRO and PVOC results were calculated on a dry-weight basis as required by WDILHR. Each analytical method follows specific quality control (QC) criteria listed in the "LUST Quality Assurance Plan," also published in April 1992 by the WDNR. This includes the selection and calibration of appropriate instruments and the use of QC samples. Daily performance tests and the demonstration of precision and accuracy in the laboratory are required.

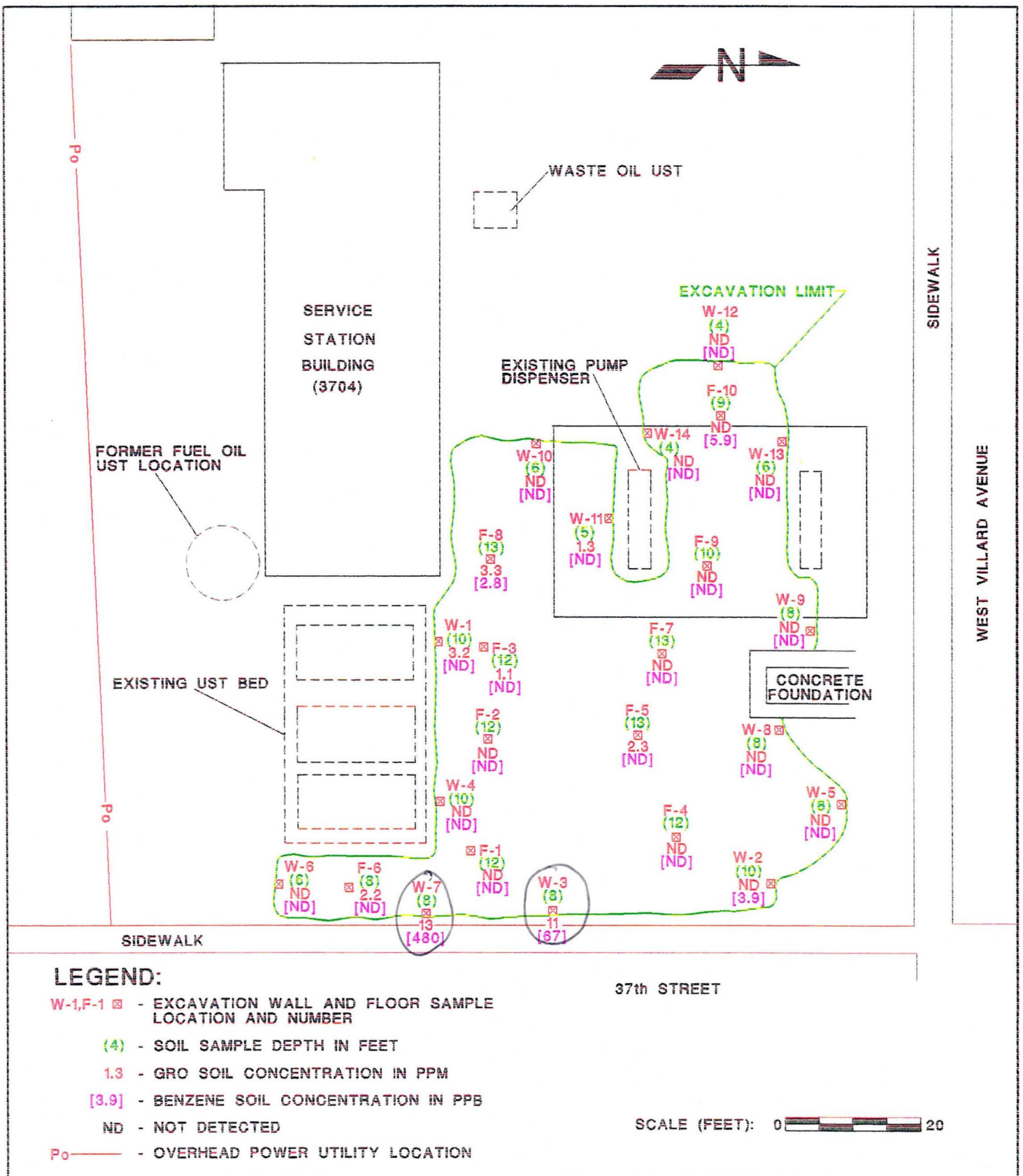


FIGURE 3 EXTENT OF EXCAVATION AND FLOOR/WALL SAMPLE RESULTS

**ROETTIGERS-VILLARD
MILWAUKEE, WISCONSIN**

A D V E N T

ENVIRONMENTAL SERVICES, INC.

DATE: 5/11/94

DRAWING # 96804CF

Soil Testing Results

Field Screening

Field screening of contaminated soil transported to the landfill indicated concentrations of 10 to 200+ ppm (benzene equivalent instrument units). PID responses of 25 to 75 ppm were recorded along the east wall adjacent to 37th Street. This soil could not be removed due to the potential to damage the sidewalk along 37th Street.

Chemical Analyses

Six soil samples were collected to confirm excavation of contaminated material (samples E-1 to E-6). These samples contained GROs ranging from 2.5 to 400 ppm. PVOCs were also present in these samples. Benzene was detected ranging from no detect to 1,800 ppb; ethylbenzene from no detect to 6,400 ppb; and xylene from 75 to 31,000 ppb.

Fourteen samples were collected along the walls (samples W-1 to W-14) of the excavation and 10 samples from the floor (samples F-1 to F-10) to document the removal of contaminated soil. GRO detects ranged from no detect to 13 ppm. Of the PVOC compounds detected in these samples, benzene ranged from no detect to 480 ppb; ethylbenzene from no detect to 680 ppb; and xylene from no detect to 1,700 ppb. Samples with elevated concentrations were all collected along the east wall of the excavation where additional excavation of soil was prevented by the proximity of 37th Street.

Sampling locations and GRO and chemical analyses results are indicated on Figure 3. Table 1 lists results of soil samples collected to document removal of contaminated soil; Table 2 lists results of wall samples; and Table 3 lists results of floor samples. Copies of laboratory data reports and chain of custody documentation are included in Appendix F.

<p style="text-align: center;">TABLE 1</p> <p style="text-align: center;">ANALYTICAL RESULTS - SOIL</p> <p style="text-align: center;">CONTAMINATION CONFIRMATION SAMPLES</p> <p style="text-align: center;">ROETTIGERS, VILLARD SITE</p>									
Sample	Case Closeout Limits	E-1	E-2	E-3	E-4	E-5	E-6	Methanol Blank	Methanol Blank
Date Collected		4/13/94	4/13/94	4/14/94	4/15/94	4/18/94	4/18/94	ND	ND
Depth (feet)									
PID		50	35	175	15	300	20		
GROs (ppm)		31	11	400	2.5	130	15	ND	ND
PVOCs (ppb)									
Benzene	5.5	850	380	ND	130	1,800	ND	—	—
Ethylbenzene	2,900	1,200	78	ND	56	6,400	77	—	—
Methyl-t- butyl-ether		ND	160	ND	130	ND	ND	—	—
Toluene	1,500	ND	ND	ND	7.7	ND	ND	—	—
1,2,4 TMB		610	250	39,000	83	14,000	150	—	—
1,3,5 TMB		290	58	13,000	ND	3,700	130	—	—
Total Xylenes	4,100	3,300	330	31,000	78	20,000	270	—	—

ND Not Detected — Not Analyzed
 For laboratory detection limits, see Appendix F

TMB trimethylbenzene

TABLE 2
ANALYTICAL RESULTS - SOIL
WALL SAMPLES
ROETTIGERS, VILLARD SITE

Sample	Case Closeout Limits	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	W-9	W-10	W-11	W-12	W-13	W-14
Date Collected		4/14/94	4/14/94	4/14/94	4/14/94	4/14/94	4/14/94	4/14/94	4/15/94	4/15/94	4/18/94	4/18/94	4/19/94	4/19/94	4/19/94
Depth (feet)															
PID		0	0	2	0	0	0	1	0	0	0	1	0	0	1
GROs (ppm)		3.2	ND	11	ND	ND	ND	13	ND	ND	ND	1.3	ND	ND	ND
PVOCs (ppb)															
Benzene	5.5	ND	3.9	67	ND	ND	ND	480	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	2,900	11	ND	260	ND	ND	ND	680	7.4	ND	ND	ND	ND	ND	ND
Methyl-t- butyl-ether		ND	ND	190	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,500	8.3	6.1	ND	ND	ND	ND	ND	6.0	ND	ND	ND	ND	ND	ND
1,2,4 TMB		63	25	120	ND	ND	ND	200	31	ND	ND	23	ND	ND	ND
1,3,5 TMB		44	ND	140	ND	ND	ND	120	25	ND	ND	13	ND	ND	ND
Total Xylenes	4,100	53	ND	400	ND	ND	ND	1,700	30	ND	ND	ND	ND	ND	ND

ND Not Detected — Not Analyzed TMB trimethylbenzene
For laboratory detection limits, see Appendix F

TABLE 3

**ANALYTICAL RESULTS - SOIL
FLOOR SAMPLES
ROETTIGERS, VILLARD SITE**

Sample	Case Closeout Limits	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10
Date Collected		4/13/94	4/14/94	4/14/94	4/14/94	4/14/94	4/14/94	4/15/94	4/18/94	4/18/94	4/19/94
Depth (feet)											
PID		0	0	0	0	0	0	0	0	0	0
GROs (ppm)		ND	ND	1.1	ND	2.3	2.2	ND	3.3	ND	ND
PVOCs (ppb)											
Benzene	5.5	ND	ND	ND	ND	ND	ND	ND	2.8	ND	5.9
Ethyl benzene	2,900	ND	ND	ND	ND	ND	ND	ND	16	ND	11
Methyl-t- butyl-ether		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,500	ND	ND	6.7	ND	ND	ND	ND	13	ND	ND
1,2,4 TMB		ND	24	18	ND	46	44	ND	100	ND	33
1,3,5 TMB		ND	18	15	ND	23	35	ND	54	ND	ND
Total Xylenes	4,100	ND	ND	23	ND	ND	ND	ND	64	ND	26

ND Not Detected — Not Analyzed
For laboratory detection limits, see Appendix F

TMB trimethylbenzene

Conclusion and Recommendations

Conclusions

Soil

The petroleum-contaminated soil that can be excavated by standard techniques on the Roettgers, Villard property has been removed and disposed of at the Parkview Landfill. A limited volume of impacted soil remains in the 37th Street right-of-way. This limited volume of soil does not pose a significant threat to human health or the environment because:

- This impacted soil is capped by 37th Street.
- The soil is limited to shallow depths and does not pose a threat to groundwater.
- The impermeable clay soil impedes further contaminant migration.
- The contaminant source has been removed.

Groundwater

Groundwater was not encountered in the excavation, which reached a depth of 13 feet. Data collected from soil borings completed at the site suggest groundwater is at depths over 50 feet. The absence of groundwater in the excavation, the limited vertical extent of soil contamination demonstrated by laboratory analyses of floor soil samples, and the impermeable nature of the clay soil suggest that it is unlikely that groundwater has been impacted by this release.

Recommendations

Advent recommends that the WDNR close the site. Additional remediation is not warranted at this site. To the extent possible, the contaminated soil has been excavated and removed. Based on the lack of GROs or PVOCs in the soil samples collected from the excavation floor, it is unlikely that groundwater has been impacted by the gasoline release.

Appendices

APPENDIX A

Remedial Approved Documentation

ADVENT

ENVIRONMENTAL SERVICES, INC.

March 28, 1994

Ms. Peggy Slind
Waste Management
N96 W13475 County Line Road
Menomonee Falls, WI 53051

re: Disposal of petroleum contaminated soil from the Roettgers, Villard site, 3709, W. Villard
Avenue, Milwaukee, WI 53209
Advent Project No. 96804

Dear Ms. Slind:

Enclosed is the Generator's Waste Profile Sheet (MW-17741), copies of relevant chemical analyses, and chain of custodies for the above-captioned site. Advent anticipates beginning excavation on April 15, 1994. Please call me at 238-1874 ext. 3018 if you require any further information.

Sincerely,

ADVENT ENVIRONMENTAL SERVICES, INC.



Chris Kern
Hydrogeologist

cak:jad

enclosure

MIDWEST REGION

GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

Waste Profile Sheet Code

MW 17741

Proposed Management Facility _____

This form is to be used to comply with the requirements of a waste agreement.

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED

Decision Expiration Date: / /

A. WASTE GENERATOR INFORMATION

Generator Name: Roettgers Oil Co. (Roettgers Villard site) 2. SIC Code: _____

3 Facility Address (site of waste generation): 3709 W. Villard Ave Milwaukee, WI

4. Generator City, State: _____ 5. Zip/Postal Code: 53209

E- State ID #: N/A

Technical Contact: Chris Kern Advent Environmental Services 8. Phone: (414) 238 - 1998

B. WASTE STREAM INFORMATION (See Instructions)

1. Name of Waste: Petroleum Contaminated Soil

Process Generating Waste: spill clean up from underground storage tanks

Amount/Units: 2,200 Tons 4. Type A ☒ Type B ☐

5. Special Handling Instructions/Supplemental Information: _____

6. Incidental Waste Types and Amounts: _____

C. TRANSPORTATION INFORMATION

1. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Sludge ☒ Bulk Solid ☐ Drum/Box ☐ Other _____

Supplemental Shipping Information: _____

D. PHYSICAL CHARACTERISTICS OF WASTE (See Instructions) (Omit for Type B)

Color <i>redish brown</i>	2. Does the waste have a strong incidental odor? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes; if so, describe: _____	3. Physical State @ 70 F/21°C: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Other: _____	4. Layers <input type="checkbox"/> Multi-layered <input type="checkbox"/> Bi-layered <input checked="" type="checkbox"/> Single Phased	5. Specific Gravity Range <i>2 - 3</i>	6. Free Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volume: _____ %
------------------------------	---	---	---	---	--

pH: ☐ ≤ 2 ☐ $> 2-4$ ☐ $4-7$ ☐ 7 ☒ $7-10$ ☐ $10- < 12.5$ ☐ ≥ 12.5 ☐ Range ☐ NA

8. Flash Point: ☐ None ☐ <140°F/60°C ☐ 140 - 199°F/60 - 93°C ☒ ≥200°F/93°C ☐ Closed Cup ☒ Open Cup

CHEMICAL COMPOSITION (Omit for Type B)

gasoline contaminated soil	95	%
----------------------------	----	---

Concrete or asphalt 5. %

_____ - _____ 0/10

0.00

9/

_____ 70

_____ 21

_____ %

0.0

Total: 100 %

Total: 100 %

2. Does the waste contain any of the following?

(provide concentration if known):

PCBs ~~NO~~ or LESS THAN or ACTUAL
 ☒ ☐ < 50 ppm _____ ppm

Cyanides ☐ ☐ < 50 ppm UNK ppm

Sulfides ☐ ☐ < 50 ppm 0WK ppm

Phenols ☐ ☐ < 50 ppm UNK ppm

The total composition must be greater than or equal to 100%. (.0001% = 1 ppm or 1 mg/l)

F. SAMPLING SOURCE (Omit for Type B) (e.g., Drum, Lagoon, Pit, Pond, Tank, Vat)

G. REPRESENTATIVE SAMPLE CERTIFICATION (Omit for Type B)

1. Print Sampler's Name: Steve Reuter

2. Sample Date: 3/30/93

3. Sampler's Title: Senior Hydrogeologist

4. Sampler's Employer (if other than Generator): Advent Environmental Services

The sampler's signature certifies that any sample submitted is representative of the waste described above pursuant to 40 CFR 261.20(c) or equivalent rules.

5. Sampler's Signature: [Signature] C.R.G.

H. GENERATOR CERTIFICATION

By signing this profile sheet, the Generator certifies:

1. This waste is not "Hazardous Waste" as defined by USEPA and/or state regulation.

2. This waste does not contain regulated radioactive materials or regulated concentrations of PCB's (Polychlorinated Biphenyls).

3. The waste does not contain regulated concentrations of the following pesticides and herbicides: Chlordane, Endrin, Heptachlor (and it's epoxide), Lindane, Methoxychlor, Toxaphene, 2, 4-D, or 2, 4, 5-TP (Silvex).

4. The waste does not contain halogenated compounds such as: tetrachloroethylene, trichloroethylene, methylene chloride, 1, 1, 1-trichloroethane, carbon tetrachloride, chloroform, ortho-dichlorobenzene, dichlorodifluoromethane, 1, 1, 2-trichloro-1, 2, 2-trifluoroethane, trichlorofluoromethane, 1, 1-dichloroethylene, and 1, 2-dichloroethylene at greater than 1% (10,000ppm) total solvent concentration. This listing includes any combination of the above named halogenated compounds where the total concentration or the sum of the concentrations of the individual compounds exceed 1% or 10,000 ppm on a weight-to-weight basis.

5. This sheet and the attachments contain true and accurate descriptions of the waste material. All relevant information regarding known or suspected hazards in the possession of the Generator has been disclosed.

6. The Generator has read and understands the Contractor's Definition of Special Waste included in Part B.5. of the attached instructions form. All types and amounts of special wastes provided in incidental amounts have been identified in section B.6. of this form.

7. The analytical data presented herein or attached hereto were derived from testing a representative sample taken in accordance with 40 CFR 261.20(c) or equivalent rules.

8. If any changes occur in the character of the waste, the Generator shall notify the Contractor prior to providing the waste to the Contractor.

9. Signature: [Signature]

10. Title: Pres.

11. Name (Type or Print)

12. Date: 3-30-94

NOTE: Omit sections D., E., F., and G., for Type B waste.

Comments:



SAFETY & BUILDINGS DIVISION

201 E. Washington Avenue
P.O. Box 7969
Madison, Wisconsin 53707

State of Wisconsin
Department of Industry, Labor and Human Relations

March 16, 1994

CHRIS KERN
ADVENT ENVIRONMENTAL SERVICES INC
6100 W EXECUTIVE DR SUITE E
MEQUON WI 53092

RE: REMEDIAL ALTERNATIVE RESPONSE
CLAIM #53209-4603-09
ROETTIGERS OIL CO, 3709 W VILLARD AVE, MILWAUKEE WI

Dear Consultant;

Thank you for contacting the department with the remediation alternatives for the above referenced site. The response is as follows.

RECOMMENDED ALTERNATIVE: Excavation & Landfill.

APPROVED: XXX DENIED: NOT APPLICABLE: SCHEDULE AN APPOINTMENT:

APPROVED ALTERNATIVE: Excavation & Landfill.

MAXIMUM CONSULTANT COST:	\$ 16,025.00
ESTIMATED COMMODITY COST:	\$ 94,986.00
TOTAL COST:	\$ 111,011.00

NOTE: ILHR 47.335(3)(c)1. states, "Only alternatives which are reasonably expected to be approvable by the DNR may be included in the comparison." DILHR has approved/disapproved the consultant's recommended remedial alternative based upon the cost estimate only. The DNR may or may not approve the lowest cost remedial alternative.

Sincerely,

Eric J. Scott
Environmental Cleanup Grant Reviewer
Bureau of Petroleum Inspection and Fire Protection
Phone (608) 266-8516, FAX (608) 267-1381

cc. DAVE ROETTIGERS, ROETTIGERS OIL CO
FILE (2)

ADVENT

ENVIRONMENTAL SERVICES, INC.

March 1, 1994

John Feeney
Wisconsin Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212

re: Soil remediation at the Roettgers, Villard Avenue site, 3709 W. Villard Avenue, Milwaukee, WI
Advent Project No. 96804.02

Dear John:

Advent proposes soil excavation and landfilling to remediate petroleum contaminated soils at the captioned site.

Review of Site Assessment

Advent's site assessment report (mailed to you in February 1994) defined the extent of petroleum contaminated soil at the site. Figure 1 indicates the extent of GRO contaminated soil. Contamination at concentrations sufficient to cause a PID response were typically detected to depths of 10-12 feet (Figure 2). Laboratory analysis of soil samples collected at the base of the borings (typically 21 feet) indicate GRO concentration of less than 5 ppm under the "hot spot" of the contaminated area.

Several borings were completed to investigate the presence of contamination in the former fuel oil UST location. DROs were detected in boring B-4 at a concentration of 16 ppm. All other samples collected in borings completed in this area did not contain DRO contamination at concentrations exceeding laboratory detection limits.

Groundwater was not encountered in the borings which were completed to a maximum depth of 51 feet.

Soil Remediation Proposal

Advent proposes excavating GRO contaminated soil from the site in an area indicated on Figure 3. The excavation would extend to a depth of approximately 12 feet, or to depths where field screening with a PID no longer detected VOCs. This proposed excavation would leave areas of contaminated soil on site. One area extends beneath 37th Street an unknown distance. The second area, with estimated concentrations below 100 ppm, extends beneath the pump island, UST piping run, and canopy area at the site. Remaining soil contamination at the site would be largely immobile in the clay soils at the site and would not constitute a hazard to groundwater or human health because of the depth to groundwater.

Page Two

Excavation is not planned for the low level detect from the former fuel oil UST location. Lack of other detects in adjacent borings indicate that this contaminated area is of limited extent.

Advent estimates that approximately 1,400 cubic yards or 2,200 tons of contaminated soil is present in the area to be excavated. Analysis of remedial options for the PECFA program indicate this remedial option to be the lowest cost.

Please call me at (414) 238-1874 ext. 3018 if you have any further questions.

Sincerely,

ADVENT ENVIRONMENTAL SERVICES, INC.

A handwritten signature in cursive script that reads "Chris Kern".

Chris A. Kern, C.P.G.
Hydrogeologist

cak:jad

cc: Mr. Don Roettgers, 5169 N. 37th Street, Milwaukee, WI 53209
Mr. Dave Roettgers c/o Weiss, Berzowski, Brady, & Donahue, 700 N. Water Street, Milwaukee,
WI 53202-4273

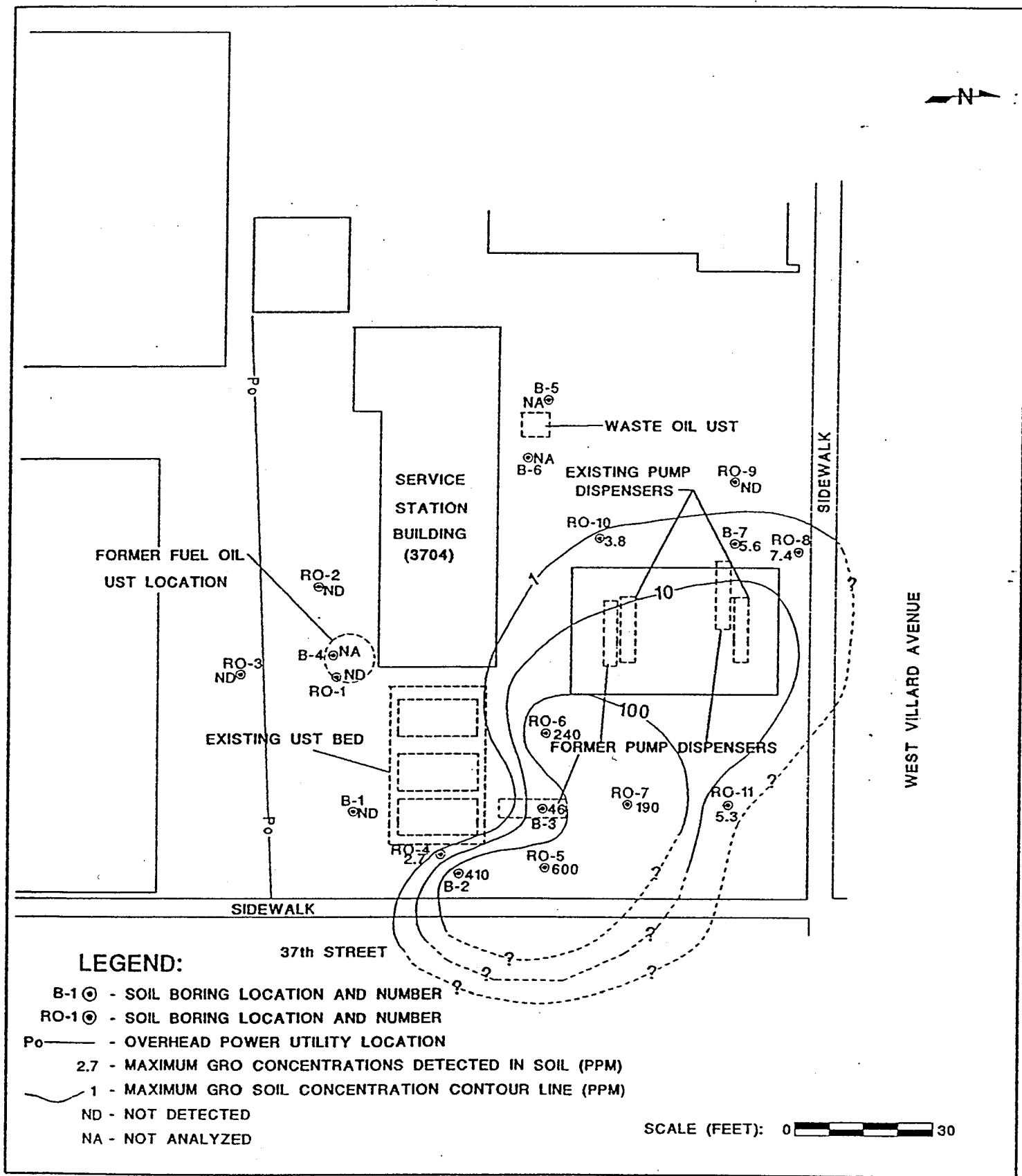


FIGURE 1 EXTENT OF GRO
CONTAMINATED SOIL (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN

A D V E N T
ENVIRONMENTAL SERVICES, INC.
DATE: 6/7/93
DRAWING # 96804CE

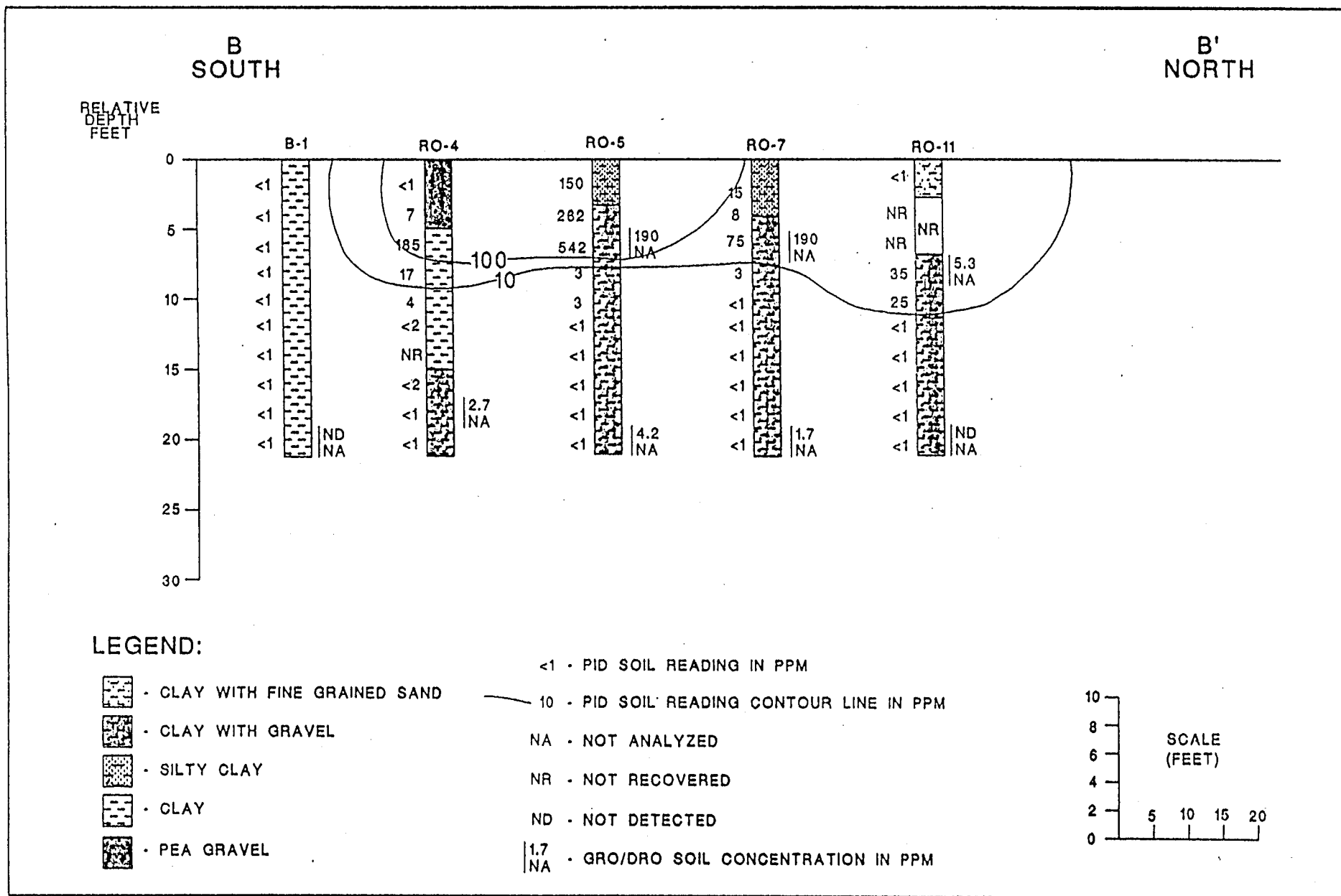


FIGURE 2 SOUTH TO NORTH PEDOLOGIC CROSS-SECTION B-B'
37th AND VILLARD
MILWAUKEE, WISCONSIN

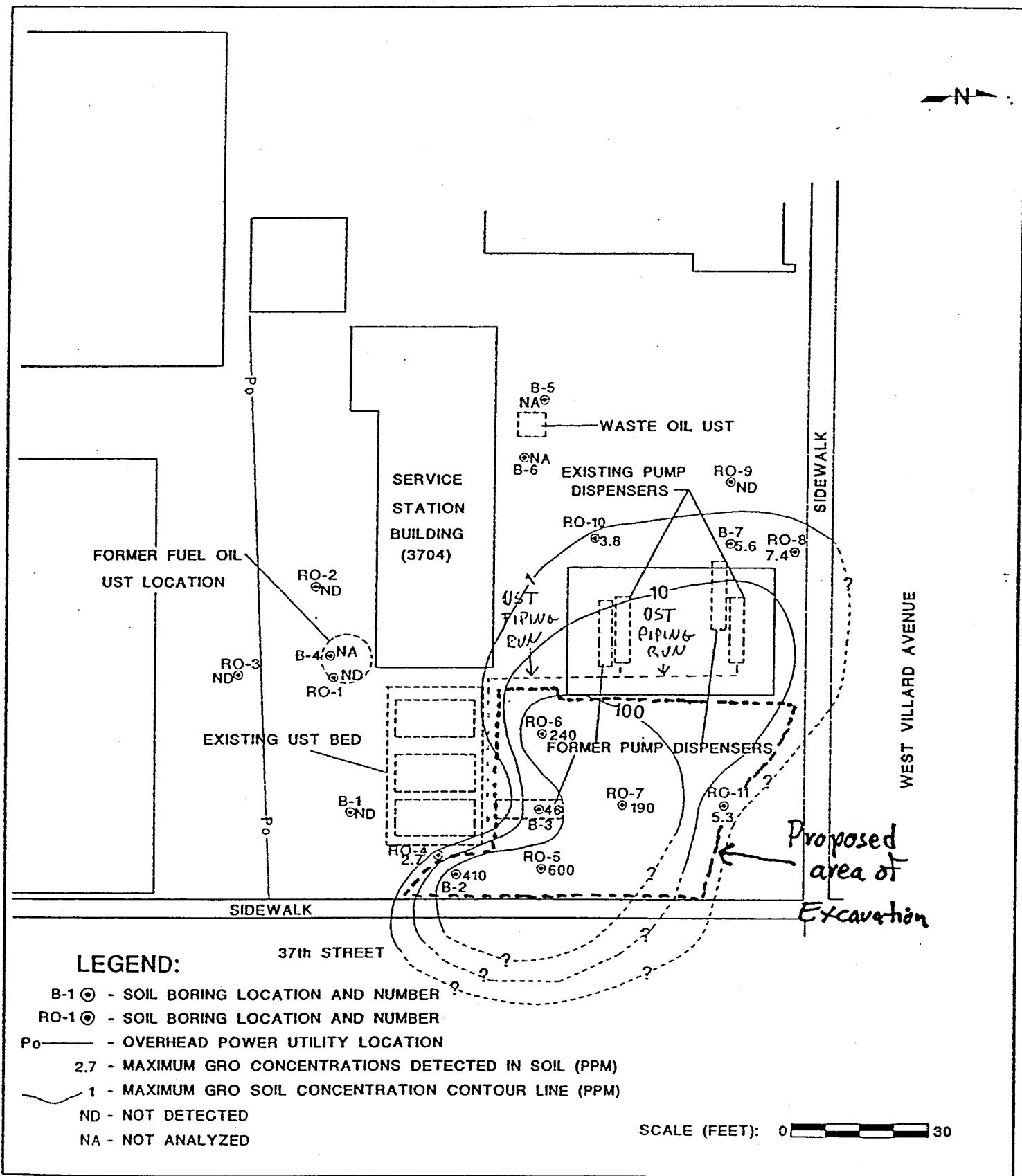


FIGURE 3 EXTENT OF GRO
CONTAMINATED SOIL (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN

A D V E N T

ENVIRONMENTAL SERVICES, INC.

DATE: 6/7/93

DRAWING # 96804CE

APPENDIX B

Field Screening Results of Excavated Soil

ADVENT ENVIRONMENTAL SERVICES, INC.

Job Name: Roettgers, Villard

Job #: 96804

Page 1 of 5

Estimated Yardage	PID readings (ppm)	Time	Date	Soil Type	Remarks Two # # 218
15	2	11:30	4/13		
30	2	12:11			
45	50				#133
60	75	12:05			233
75	10	12:0			35
90	90	12:5			418
105	120	12:20			218
120	80	12:55			82
135	10	1:05			35
150	35	1:10			133
165	70	1:15			233
180	25	1:35			418
195	125	1:55			82
210	50	2:05			35
225	20	2:15			133
240	130	2:25			418
255	110	2:40			233
270	95	2:50			82
285	20	3:05			35
300	50	3:15			133
315	35	3:25			418
330	70	3:35			218
345	80	3:45			233
360	35 35	8:00	4/14		318
375	10	8:20			No N. in soil
390	85	8:30			23
405	40	8:35			44

E-1

E-2

Job Name:

Rad Gas

Job #:

Page 2 of 5

Estimated Yardage	PID readings (ppm)	Time	Date	Soil Type	Remarks Twice #
420	95	8:40	4/14	Clay	418
435	175	8:45			60
450	26	8:50			133
465	35	8:55			233
480	10	9:05			27
495	30	9:10			82
510	95	9:15			318
525	110	9:20			No Number
540	105	9:30			23
555	85	9:35			44
570	60	9:45			418
585	160	9:50			133
600	50	10:00			233
615	40	10:15			82
630	40	10:35			318
645	20	10:50			27
660	95	10:55			No Number
675	110	11:00			?
690	30	11:05			44
705	35	11:15			418
720	125	11:20			60
735	135	11:30			133
750	180	11:35			233
765	110	11:45			82
780	20	11:55			318
795	45	12:05			27
810	45	12:15			No Number

E-3

ADVENT ENVIRONMENTAL SERVICES, INC.

Job Name:

Job #:

Page 3 of 5

Estimated Yardage	PID readings (ppm)	Time	Date	Soil Type	Remarks
					Truck #
825	50	12:25	4/14	Rubble	23
840	70	12:40			44
855	10	12:55			60
870	120	1:15			?
885	130	10:15	4/15	clay	54
900	15	11:25			35
915	45	11:30			218
930	80	11:35			23
945	70	10:40			418
960	140	10:50			233
975	200+	11:10			54
990	80	11:20			35
1,005	60	11:30			218
1,020	65	11:35			23
1,035	125	11:45			418
1,050	140	12:10			233
1,065	35	12:30			418
1,080	105	1:00			54
1,095	130	1:05			233
1,110	150	1:20			35
1,125	165	8:00	4/18		54
1,140	35	8:10			44
1,155	85	8:15			Nonumber
1,170	90	8:25			34
1,185	105	8:35			418
1,200	10	9:00			54
1,215	45	9:10			44

870
1.4
3480
870
12180
E-4

60
20
00
12
19200

E-5

ADVENT ENVIRONMENTAL SERVICES, INC.

Job Name:

Job #:

Page 4 of 5

Estimated Yardage	PID readings (ppm)	Time	Date	Soil Type	Remarks
1,230	20	9:15	7/18	clay	# 318
1,245	30	9:30			H-1
1,260	90	10:10			?
1,275	120	10:10		clay	#44
1,290	80	10:15			H-1
1,305	35	10:25			418
1,320	70	10:45			54
1,335	125	11:10			H-1
1,350	130	11:55			44
1,365	20	12:00			54
1,380	35	12:10			34
1,395	80	12:20			H-1
1,410	10	12:25			418
1,425	40	1:15			?
1,440	35	1:30			H-1
1,455	145	1:35			34
1,470	200+				?
1,485	160	1:50			418
1,500	140	2:20			54
1,515	40	2:35			H-1
1,530	35	2:45			S-4
1,545	110	2:50			34
1,560	90	3:00			418
1,575	10	3:05			44
1,590	10	3:30			H-1
1,605	55	8:30	4/19		44
1,620	135	9:05			218

94
50
1440

E-6

ADVENT ENVIRONMENTAL SERVICES, INC.

Job Name:

Job #:

Page 5 of 5

Estimated Yardage	PID readings (ppm)	Time	Date	Soil Type	Remarks
1,635	10	8:10	4/19		4/18
1,650	20	9:30	4/19		48
1,665	10	9:45	4/19		54
1,680					
1,695					
1,710					
1,725					
1,740					
1,755					
1,770					
1,785					
1,800					
1,815					
1,830					
1,845					
1,860					
1,875					
1,890					
1,905					
1,920					
1,935					
1,950					
1,965					
1,980					
1,995					
2,010					
2,025					

APPENDIX C
Site Photographs

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers, Villard (#96804)

PAGE 1 OF 3

DATE: 4/18/94

TIME: _____

DIRECTION OF
PHOTOGRAPH:

Looking Northeast

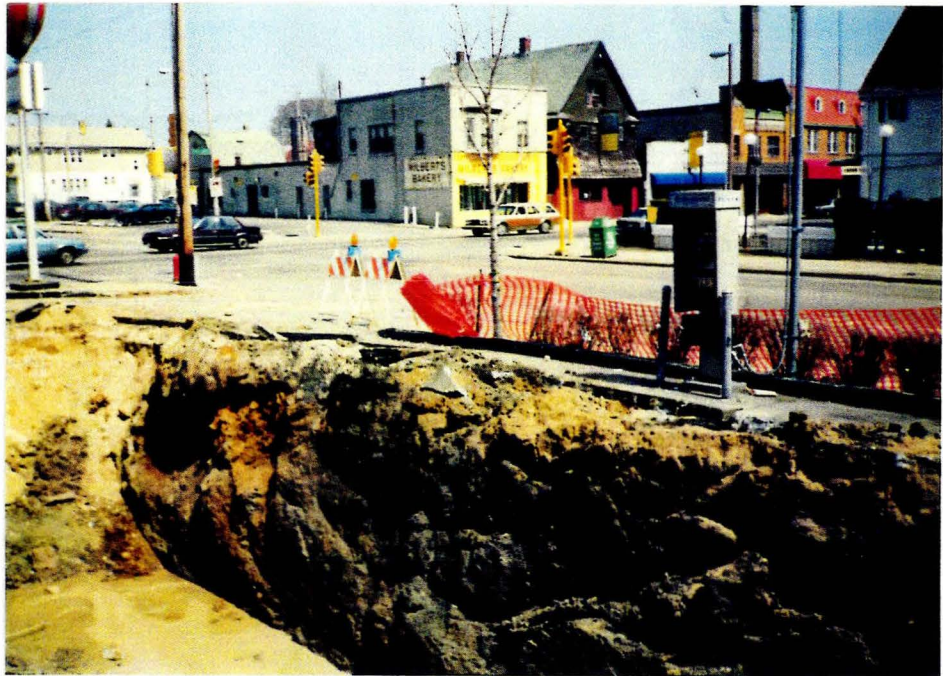
WEATHER CONDITIONS:

Sunny

60°F

PHOTOGRAPHED BY:

Chris Kern



DESCRIPTION: Northeastern wall of excavation, 37th Street to right, Villard Avenue in background.

DATE: 4/18/94

TIME: _____

DIRECTION OF
PHOTOGRAPH:

Looking east

WEATHER CONDITIONS:

Sunny

60°F

PHOTOGRAPHED BY:

Chris Kern



DESCRIPTION: Eastern wall of excavation, 37th Street in background

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers, Villard (#96804)

PAGE 2 OF 3

DATE: 4/14/94

TIME: _____

DIRECTION OF
PHOTOGRAPH:

Looking East

WEATHER CONDITIONS:

Cloudy

55°F

PHOTOGRAPHED BY:

Chris Kern



DESCRIPTION: Excavating area north of UST bed, note cut off piping.

DATE: 4/14/94

TIME: _____

DIRECTION OF
PHOTOGRAPH:

Looking north

WEATHER CONDITIONS:

Sunny

60°F

PHOTOGRAPHED BY:

Chris Kern



DESCRIPTION: Excavating in area of concrete Villard Avenue is in the background.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers, Villard (#96804)

PAGE 3 OF 3

DATE: 4/18/94

TIME: _____

DIRECTION OF
PHOTOGRAPH:

Looking west

WEATHER CONDITIONS:

Sunny

60°F

PHOTOGRAPHED BY:

Chris Kern



DESCRIPTION: West wall between pump islands.

DATE: 4/18/94

TIME: _____

DIRECTION OF
PHOTOGRAPH:

Looking north

WEATHER CONDITIONS:

Sunny

60°F

PHOTOGRAPHED BY:

Chris Kern



DESCRIPTION: North wall between pump islands, cones mark location of borings completed during site investigation.

APPENDIX D

Standard Sampling Procedures and Chain of Custody Procedures

SAMPLING AND FIELD SCREENING PROCEDURES

Soil Sampling Procedures

Subsurface soil samples were collected with the bucket of the back hoe from the soil excavation. Adequate soil was collected and split into a sample for field screening and a sample for laboratory analysis, if needed. Soil collected from the back hoe bucket was taken from the inside of a mass of soil to prevent the collection of cross contaminated soil that may have come in contact with the back hoe bucket.

The following headspace methodologies were used for PID field screening of soil samples:

1. The PID was calibrated at the site according to the manufacturer's specifications before commencing field operations. Results of the calibration were recorded on a calibration log sheet.
2. Headspace samples were collected in clean four-ounce glass jars.
3. The jars were filled half full and sealed with heavy gauge aluminum foil immediately after sampling.
4. Once the headspace samples were sealed, the samples were agitated for at least 30 seconds to break up soil clods and release vapors.
5. After being agitated, the samples were placed out of direct sunlight and allowed to equilibrate to approximately 70° F.
6. Following equilibration, the headspace samples were analyzed by inserting the tip of the PID probe through a single, small hole in the foil seal to a position half-way between the seal and sample surface. The highest instrumental reading in benzene equivalent ppm was then recorded.

Soil Samples Submitted for Laboratory Analysis

Soil samples submitted for laboratory analysis were collected as split samples from the same location as the samples for field screening. Soil samples submitted were transferred into the appropriate containers depending on the laboratory analysis needed.

ANALYTE	CONTAINER TYPE	FIELD PRESERVATIVE
GRO	2 oz. septa-cap jar	Methanol
PVOC	4 oz. TLC jar	none

TLC = teflon lined cap

Samples were then sealed and cooled to 4°C for transport to the laboratory. All collected samples were labeled with the following information:

- Site Name;
- Sample Number;
- Sample Location;
- Date and Time of Collection;
- Analysis Requested;
- Name of Sampler; and
- Other Applicable Information (i.e., PID readings, odors)

Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures is to ensure security and integrity of the sample from collection through transportation, storage, and analysis.

Sample identification documents were carefully prepared so that sample identification and chain of custody were maintained and sample disposition was controlled. Sample identification documents included:

- * Field Notebooks;
- * Sample Labels; and
- * Chain of Custody Records.

Each sample was labeled, chemically or physically preserved, and sealed immediately after collection. To minimize handling of sample containers, a label was filled out prior to sample collection. The sample label was completed using waterproof ink and then firmly affixed to the sample container. The sample label provided the following information:

- * Sample Number;
- * Location;
- * Date and Time of Collection;
- * Analysis Required; and
- * Name of Sampler.

A chain of custody record was fully completed in triplicate by the advent sampler immediately following sample collection.

Transfer of Custody Shipment

The samples and chain of custody record were packed in a cooler. When transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the chain of custody record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification numbers matched those on the chain of custody record. A copy of the chain of custody record was retained by the laboratory until analyses were complete. The record was then transferred to the site file with the analytical results.

APPENDIX E
PID Calibration Documentation

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: Roettgers, Villard DATE: 4/13/94

SIGNATURE: Chris Klem TIME: 11:00

AMBIENT TEMPERATURE: 50°

SAMPLE EQUILIBRATION TEMPERATURE: 70°

WEATHER CONDITIONS: Cloudy

HNU Model PI 101, Advent Environmental Services, Inc. number 5 was calibrated with 100 parts per million Isobutylene calibration gas which is equivalent in response to 55 parts per million benzene at a gain setting of 4.82 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: —

REPAIRS OR CLEANING: —

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December, 1985.

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: Roettgers, Villard DATE: 4/14/98

SIGNATURE: Chris Kern TIME: 7:15

AMBIENT TEMPERATURE: 55°

SAMPLE EQUILIBRATION TEMPERATURE: 70°

WEATHER CONDITIONS: Sunny

HNU Model PI 101, Advent Environmental Services, Inc. number 5 was calibrated with 100 parts per million Isobutylene calibration gas which is equivalent in response to 55 parts per million benzene at a gain setting of 4.92 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: _____

REPAIRS OR CLEANING: _____

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December, 1985.

ENVIRONMENTAL SERVICES, INC.

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: Roettgers, Villard DATE: 4/18/94

SIGNATURE: Chris Kern TIME: 7:15

AMBIENT TEMPERATURE: 60°

SAMPLE EQUILIBRATION TEMPERATURE: 70°

WEATHER CONDITIONS: Clear, Sunny

HNU Model PI 101, Advent Environmental Services, Inc. number 5 was calibrated with 100 parts per million Isobutylene calibration gas which is equivalent in response to 55 parts per million benzene at a gain setting of 4.48 with a 02 electron volt (Ev) lamp.

ERRATIC READINGS:

REPAIRS OR CLEANING:

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December, 1985.

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: Raetzgers, Villard DATE: 4/19/94

SIGNATURE: Chris Kern TIME: 7:15

AMBIENT TEMPERATURE: 55°

SAMPLE EQUILIBRATION TEMPERATURE: 70°

WEATHER CONDITIONS: Sunny

HNU Model PI 101, Advent Environmental Services, Inc. number 5 was calibrated with 100 parts per million Isobutylene calibration gas which is equivalent in response to 55 parts per million benzene at a gain setting of 4.86 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: —

REPAIRS OR CLEANING: —

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December, 1985.

APPENDIX F

Laboratory Results and Chain of Custody Documentation

May 2, 1994

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Project: 96804, Roettgens, Villard

Enclosed are the results from 8 soil samples and 1 water sample received at Great Lakes Analytical on April 15, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4040888	Soil: E-1	4/13/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040889	Soil: F-1	4/13/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040890	Soil: E-2	4/13/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040891	Soil: F-2	4/14/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040892	Soil: W-1	4/14/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040893	Soil: F-3	4/14/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040894	Liquid, Methanol Blank	4/14/94	WDNR GRO
4040895	Soil: E-3	4/14/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4040896	Soil: F-4	4/14/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO

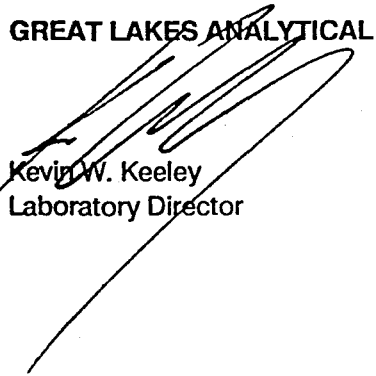
SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4040897	Soil: W-2	4/14/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO

This report may not be reproduced, except in full, without the written approval of the laboratory.

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL



Kevin W. Keeley
Laboratory Director

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Sample Descript: Soil
Analysis for: Percent Solids by EPA 160.3
First Sample #: 404-0888

Sampled: Apr 13-14, 1994
Received: Apr 15, 1994
Analyzed: Apr 20-21, 1994
Reported: May 2, 1994

LABORATORY ANALYSIS FOR: Percent Solids by EPA 160.3

Sample Number	Sample Description	Detection Limit %	Sample Result %
404-0888	E-1	0.10	84
404-0889	F-1	0.10	82
404-0890	E-2	0.10	80
404-0891	F-2	0.10	83
404-0892	W-1	0.10	90
404-0893	F-3	0.10	87
404-0895	E-3	0.10	85
404-0896	F-4	0.10	81
404-0897	W-2	0.10	97

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

4040888.ADV <1>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Matrix Descript: Soil
Analysis Method: WDNR GRO
First Sample #: 404-0888

Sampled: Apr 13-14, 1994
Received: Apr 15, 1994
Analyzed: Apr 24-25, 1994
Reported: May 2, 1994

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
404-0888	E-1	12	31	Gas range, elevated baseline early peaks
404-0889	F-1	1.2	N.D.	—
404-0890	E-2	2.5	11	Gas range, elevated baseline early peaks
404-0891	F-2	1.2	N.D.	—
404-0892	W-1	1.1	3.2	Gas range, elevated baseline early & late peaks
404-0893	F-3	1.1	1.1	Gas range, elevated baseline early peaks
404-0895	E-3	390	400	Gas range, elevated baseline early & late peaks
404-0896	F-4	1.2	N.D.	—
404-0897	W-2	1.0	N.D.	—

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040888.ADV <2>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Matrix Descript: Liquid
Analysis Method: WDNR GRO
First Sample #: 404-0894

Sampled: Apr 14, 1994
Received: Apr 15, 1994
Analyzed: Apr 27, 1994
Reported: May 2, 1994

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit $\mu\text{g/L}$ (ppb)	Low/Medium B.P. Hydrocarbons $\mu\text{g/L}$ (ppb)	Chromatogram Description
404-0894	Methanol Blank	1,000	N.D.	—

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Sample Descript: Soil: E-1
Analysis Method: EPA 5030/8020
Lab Number: 404-0888

Sampled: Apr 13, 1994
Received: Apr 15, 1994
Analyzed: Apr 25, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	24	850
Ethyl Benzene.....	60	1,200
Methyl-t-Butyl Ether.....	600	N.D.
Toluene.....	60	N.D.
124 Trimethylbenzene.....	120	610
135 Trimethylbenzene.....	120	290
Xylene.....	180	3,300

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040888.ADV <4>



Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Sample Descript: Soil: F-1
Analysis Method: EPA 5030/8020
Lab Number: 404-0889

Sampled: Apr 13, 1994
Received: Apr 15, 1994
Analyzed: Apr 25, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Sample Descript: Soil: E-2
Analysis Method: EPA 5030/8020
Lab Number: 404-0890

Sampled: Apr 13, 1994
Received: Apr 15, 1994
Analyzed: Apr 25, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	5.0	380
Ethyl Benzene.....	13	78
Methyl-t-Butyl Ether.....	130	160
Toluene.....	13	N.D.
124 Trimethylbenzene.....	25	250
135 Trimethylbenzene.....	25	58
Xylene.....	38	330

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040888.ADV <6>

Advent Environmental Services	Client Project ID: 96804, Roettgens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: F-2	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 25, 1994
Attention: Chris Kern	Lab Number: 404-0891	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	24
135 Trimethylbenzene.....	12	18
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keady
Laboratory Director

4040888.ADV <7>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Sample Descript: Soil: W-1
Analysis Method: EPA 5030/8020
Lab Number: 404-0892

Sampled: Apr 14, 1994
Received: Apr 15, 1994
Analyzed: Apr 25, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.2	N.D.
Ethyl Benzene.....	5.5	11
Methyl-t-Butyl Ether.....	55	N.D.
Toluene.....	5.5	8.3
124 Trimethylbenzene.....	11	63
135 Trimethylbenzene.....	11	44
Xylene.....	17	53

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Kesley
Laboratory Director

4040888.ADV <8>

Advent Environmental Services	Client Project ID: 96804, Roettgens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: F-3	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 25, 1994
Attention: Chris Kern	Lab Number: 404-0893	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.2	N.D.
Ethyl Benzene.....	5.5	N.D.
Methyl-t-Butyl Ether.....	55	N.D.
Toluene.....	5.5	6.7
124 Trimethylbenzene.....	11	18
135 Trimethylbenzene.....	11	15
Xylene.....	17	23

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040888.ADV <9>

Advent Environmental Services	Client Project ID: 96804, Roettgens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: E-3	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 25, 1994
Attention: Chris Kern	Lab Number: 404-0895	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	780	N.D.
Ethyl Benzene.....	2,000	N.D.
Methyl-t-Butyl Ether.....	20,000	N.D.
Toluene.....	2,000	N.D.
124 Trimethylbenzene.....	3,900	39,000
135 Trimethylbenzene.....	3,900	13,000
Xylene.....	5,900	31,000

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040888.ADV <10>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roettgens, Villard
Sample Descript: Soil: F-4
Analysis Method: EPA 5030/8020
Lab Number: 404-0896

Sampled: Apr 14, 1994
Received: Apr 15, 1994
Analyzed: Apr 25, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96804, Roettgens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-2	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 25, 1994
Attention: Chris Kern	Lab Number: 404-0897	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.0	3.9
Ethyl Benzene.....	5.0	N.D.
Methyl-t-Butyl Ether.....	50	N.D.
Toluene.....	5.0	6.1
124 Trimethylbenzene.....	10	25
135 Trimethylbenzene.....	10	N.D.
Xylene.....	15	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Client: <u>Thwait</u>	Project: <u>Roettgers, Villard</u>	TAT: <u>5 DAY</u> 4 DAY 3 DAY 2 DAY 1 DAY < 24 H
Address: <u>6100 W Executive Dr</u>	Sampler: <u>Chris Kern</u>	DATE RESULTS NEEDED: <u>4/22/94</u>
	PO #: <u>96804</u>	TEMPERATURE UPON RECEIPT: <u>OW ICE</u>
Report to: <u>Chris Kern</u>	Phone #: _____ FAX #: _____	AIR BILL NO. _____

FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE		PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE	SAMPLE CONTROL			LABORATORY ID NUMBER
			DEVICE	MATRIX					CRACKED/BROKEN	IMPROPERLY SEALED	GOOD CONDITION	
E-1	4/13	12:00	Soil					PID > 50 GRO, PVOC GRO PVOC			✓	4040888
F-1	4/13	2:50	Soil					PID = 0			✓	4040889
E-2	4/13	3:25	"					" " PID = 35			✓	4040890
E-2	4/14	9:00	"					" " PID = 0			✓	4040891
W-1	4/14	9:30	"					" " PID = 0			✓	4040892
F-3	4/14	9:35	"					" " PID = 0			✓	4040893
Meth Blank	"	9:40	—					GRO			✓	4040894
E-3	4/14	10:45	Soil					GRO PVOC PID = 175			✓	4040895
F-X	4/14	11:15	"					" " PID = 0			✓	4040896
W-2	4/14	11:30	"					" " PID = 0			✓	4040897

RELINQUISHED <u>Chris Kern</u> 4/15 DATE: 4/15/94 TIME: 3:10	RECEIVED <u>Kevin Knoll</u> 4/15/94 DATE: 4/15/94 TIME: 15:10	RELINQUISHED DATE: _____ TIME: _____	RECEIVED DATE: _____ TIME: _____
---	--	--	--

COMMENTS: GRO BOTTLES RECOVERED PRESERVED w/ METH

PAGE _____ OF _____

May 2, 1994

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Project: 96804, Roetthens, Villard

Enclosed are the results from 11 soil samples received at Great Lakes Analytical on April 15, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4040898	Soil: W-3	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040899	Soil: F-5	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040900	Soil: W-4	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040901	Soil: W-5	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040902	Soil: F-6	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040903	Soil: W-6	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040904	Soil: W-7	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040905	Soil: E-4	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040906	Soil: F-7	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO

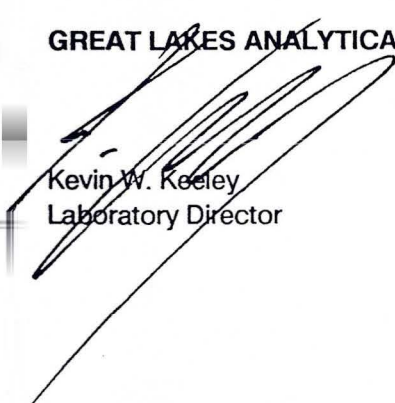
SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4040907	Soil: W-8	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO
4040908	Soil: W-9	4/14/94	PVOC's, EPA 5030/8020 Percent Solids By EPA 160.3 WDNR GRO

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL



Kevin W. Keeley
Laboratory Director

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roetthens, Villard
Sample Descript: Soil
Analysis for: Percent Solids By EPA 160.3
First Sample #: 404-0898

Sampled: Apr 14-15, 1994
Received: Apr 15, 1994
Analyzed: Apr 21-22, 1994
Reported: May 2, 1994

LABORATORY ANALYSIS FOR: Percent Solids By EPA 160.3

Sample Number	Sample Description	Detection Limit %	Sample Result %
404-0898	W-3	0.10	81
404-0899	F-5	0.10	81
404-0900	W-4	0.10	83
404-0901	W-5	0.10	79
404-0902	F-6	0.10	86
404-0903	W-6	0.10	85
404-0904	W-7	0.10	80
404-0905	E-4	0.10	83
404-0906	F-7	0.10	81
404-0907	W-8	0.10	82
404-0908	W-9	0.10	82

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040898.ADV <1>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roetthens, Villard
Matrix Descript: Soil
Analysis Method: WDNR GRO
First Sample #: 404-0898

Sampled: Apr 14-15, 1994
Received: Apr 15, 1994
Analyzed: Apr 27, 1994
Reported: May 2, 1994

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
404-0898	W-3	3.5	11	Gas range pattern, elevated baseline early & late peaks
404-0899	F-5	1.2	2.3	Gas range, elevated baseline early & late peaks
404-0900	W-4	1.2	N.D.	---
404-0901	W-5	1.3	N.D.	---
404-0902	F-6	1.2	2.2	Gas range, elevated baseline early & late peaks
404-0903	W-6	1.2	N.D.	---
404-0904	W-7	1.2	13	Gas range, early and late peaks
404-0905	E-4	1.2	2.5	Gas range pattern, elevated baseline early & late peaks
404-0906	F-7	1.2	N.D.	---
404-0907	W-8	1.2	N.D.	---

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Koeley
Laboratory Director

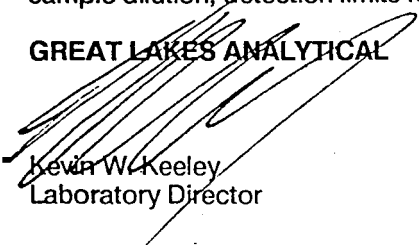
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Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14-15, 1994
6100 W. Executive, Suite E	Matrix Descript: Soil	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: WDNR GRO	Analyzed: Apr 27, 1994
Attention: Chris Kern	First Sample #: 404-0908	Reported: May 2, 1994

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
404-0908	W-9	1.2	N.D.	—

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL
Kevin W. Keeley
Laboratory Director

4040898.ADV <3>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roeththens, Villard
Sample Descript: Soil: W-3
Analysis Method: EPA 5030/8020
Lab Number: 404-0898

Sampled: Apr 14, 1994
Received: Apr 15, 1994
Analyzed: Apr 27, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	7.0	67
Ethyl Benzene.....	18	260
Methyl-1-Butyl Ether.....	180	190
Toluene.....	18	N.D.
124 Trimethylbenzene.....	35	120
135 Trimethylbenzene.....	35	140
Xylene.....	53	400

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040898.ADV <4>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roeththens, Villard
Sample Descript: Soil: F-5
Analysis Method: EPA 5030/8020
Lab Number: 404-0899

Sampled: Apr 14, 1994
Received: Apr 15, 1994
Analyzed: Apr 27, 1994
Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	46
135 Trimethylbenzene.....	12	23
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

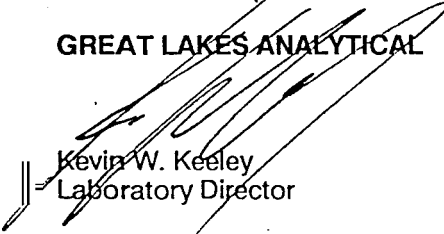
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Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-4	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0900	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	110
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

4040898.ADV <6>

Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-5	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0901	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.6	N.D.
Ethyl Benzene.....	6.5	N.D.
Methyl-t-Butyl Ether.....	65	N.D.
Toluene.....	6.5	N.D.
124 Trimethylbenzene.....	13	N.D.
135 Trimethylbenzene.....	13	N.D.
Xylene.....	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

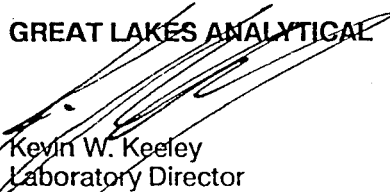
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Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: F-6	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0902	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	44
135 Trimethylbenzene.....	12	35
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

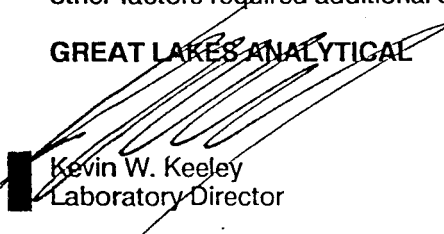
4040898.ADV <8>

Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-6	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0903	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director


4040898.ADV <9>

Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-7	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0904	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	24	480
Ethyl Benzene.....	60	680
Methyl-t-Butyl Ether.....	600	N.D.
Toluene.....	60	N.D.
124 Trimethylbenzene.....	120	200
135 Trimethylbenzene.....	120	120
Xylene.....	180	1,700

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

4040898.ADV <10>

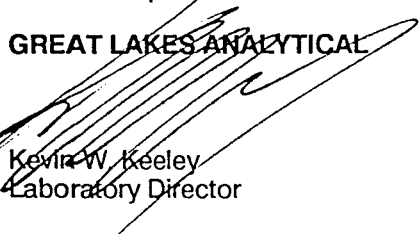
Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: E-4	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0905	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
---------	--------------------------------------	-------------------------------------

Benzene.....	2.4	130
Ethyl Benzene.....	6.0	56
Methyl-t-Butyl Ether.....	60	130
Toluene.....	6.0	7.7
124 Trimethylbenzene.....	12	83
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	78

Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


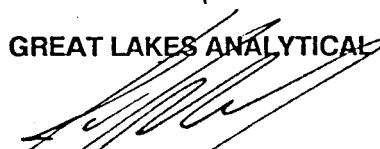
Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96804, Roeththens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: F-7	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0906	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96804, Roeththens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-8	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0907	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	7.4
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	6.0
124 Trimethylbenzene.....	12	31
135 Trimethylbenzene.....	12	25
Xylene.....	18	30

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96804, Roetthens, Villard	Sampled: Apr 14, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-9	Received: Apr 15, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 27, 1994
Attention: Chris Kern	Lab Number: 404-0908	Reported: May 2, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4040898.ADV <14>



1380 Busch Parkway • Buffalo Grove, Illinois 60089

(708) 808-7766 FAX (708) 808-7772

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roetthens, Villard

QC Sample Group: 4040898-908

Reported: Apr 2, 1994

QUALITY CONTROL DATA REPORT**ANALYTE**

Percent Solids

Method: 160.3

Analyst: A. Preshlock

Reporting Units: %

Date Analyzed: Apr 21, 1994

QC Sample #: BLK042194

Sample Conc.: N.D.

Spike Conc.
Added: 950Conc. Matrix
Spike: 860Matrix Spike
% Recovery: 91Conc. Matrix
Spike Dup.: 840Matrix Spike
Duplicate
% Recovery: 88Relative
% Difference: 2.0

Laboratory blank contained the following analytes: None Detected

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

4040898 ADV <15>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roeththens, Villard

QC Sample Group: 4040898-908

Reported: Apr 2, 1994

QUALITY CONTROL DATA REPORT

ANALYTE

WGRO

Method: WGRO
Analyst: J. Wallace
Concentration: 2.000
Units: ng

MATRIX SPIKE DATA

Date Prepared: Apr 27, 1994
Date Analyzed: Apr 27, 1994
Instrument I.D.# GC-5

Matrix Spike
% Recovery: 96

METHOD SPIKE & DUP. DATA

Date Prepared: Apr 27, 1994
Date Analyzed: Apr 27, 1994
Instrument I.D.# GC-5

Method Spike
% Recovery: 109

Method Spike
Duplicate %
Recovery: 90

Relative %
Difference: 19

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

4040898 ADV <16>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96804, Roeththens, Villard

QC Sample Group: 4040898-908

Reported: Apr 2, 1994

QUALITY CONTROL DATA REPORT

ANALYTE

Benzene

Toluene

Ethylbenzene

Xylene

Method:	8020	8020	8020	8020
Analyst:	J. Wallace	J. Wallace	J. Wallace	J. Wallace
Concentration:	50	50	50	50
Units:	ng	ng	ng	ng

MATRIX SPIKE DATA

Date Analyzed:	Apr 27, 1994	Apr 27, 1994	Apr 27, 1994	Apr 27, 1994
Instrument I.D.#	GC-5	GC-5	GC-5	GC-5
Matrix Spike % Recovery:	108	110	104	100

METHOD SPIKE & DUPLICATE DATA

Date Analyzed:	Apr 27, 1994	Apr 27, 1994	Apr 27, 1994	Apr 27, 1994
Instrument I.D.#	GC-5	GC-5	GC-5	GC-5
Method Spike % Recovery:	92	88	86	86
Method Spike Duplicate % Recovery:	96	96	94	92
Relative % Difference:	4.3	8.7	8.9	6.7

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

4040898.ADV <17>

May 3, 1994

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Project: 96084, Roettgens, Villard

Enclosed are the results from 10 soil samples and 1 water sample received at Great Lakes Analytical on April 19, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4041205	Soil: F-8	4/18/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041206	Soil: E-5	4/18/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041207	Soil: F-9	4/18/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041208	Soil: W-10	4/18/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041209	Soil: W-11	4/18/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041210	Soil: E-6	4/18/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041211	Soil: W-12	4/19/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041212	Soil: F-10	4/19/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041213	Soil: W-13	4/19/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO


SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4041214	Soil: W-14	4/19/94	PVOC's, EPA 5030/8020 Percent Solids by EPA 160.3 WDNR GRO
4041215	Water, Methanol Blank	4/19/94	WDNR GRO

This report may not be reproduced, except in full, without the written approval of the laboratory.

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL



Kevin W. Keeley
Laboratory Director


Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard
Sample Descript: Soil
Analysis for: Percent Solids by EPA 160.3
First Sample #: 404-1205

Sampled: Apr 18-19, 1994
Received: Apr 19, 1994
Analyzed: Apr 25-26, 1994
Revised Report: May 9, 1994

LABORATORY ANALYSIS FOR: Percent Solids by EPA 160.3

Sample Number	Sample Description	Detection Limit %	Sample Result %
404-1205	F-8	0.10	87
404-1206	E-5	0.10	87
404-1207	F-9	0.10	81
404-1208	W-10	0.10	82
404-1209	W-11	0.10	84
404-1210	E-6	0.10	87
404-1211	W-12	0.10	85
404-1212	F-10	0.10	82
404-1213	W-13	0.10	86
404-1214	W-14	0.10	86

GREAT LAKES ANALYTICAL
Kevin W. Keeley
Laboratory Director

4041205.ADV <1>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard
Matrix Descript: Soil
Analysis Method: WDNR GRO
First Sample #: 404-1205

Sampled: Apr 18-19, 1994
Received: Apr 19, 1994
Analyzed: Apr 29-30, 1994
Revised Report: May 9, 1994

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
404-1205	F-8	1.1	3.3	Late gas range, elevated baseline late peaks
404-1206	E-5	57	130	Gas pattern, plus gas range peaks
404-1207	F-9	1.2	N.D.	—
404-1208	W-10	1.2	N.D.	—
404-1209	W-11	1.2	1.3	Late gas range, elevated baseline late peaks
404-1210	E-6	4.6	15	Gas range, elevated baseline
404-1211	W-12	1.2	N.D.	—
404-1212	F-10	1.2	N.D.	—
404-1213	W-13	1.2	N.D.	—
404-1214	W-14	1.2	N.D.	—

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4041205.ADV <2>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard
Matrix Descript: Water
Analysis Method: WDNR GRO
First Sample #: 404-1215

Sampled: Apr 19, 1994
Received: Apr 19, 1994
Analyzed: Apr 30, 1994
Revised Report: May 9, 1994

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit $\mu\text{g/L}$ (ppb)	Low/Medium B.P. Hydrocarbons $\mu\text{g/L}$ (ppb)	Chromatogram Description
404-1215	Methanol Blank	1,000	N.D.	----

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4041205.ADV <3>

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 18, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: F-8	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 29, 1994
Attention: Chris Kern	Lab Number: 404-1205	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.2	2.8
Ethyl Benzene.....	5.5	15
Methyl-t-Butyl Ether.....	55	N.D.
Toluene.....	5.5	13
124 Trimethylbenzene.....	11	100
135 Trimethylbenzene.....	11	54
Xylene.....	17	64

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4041205.ADV <4>

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 18, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: E-5	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 30, 1994
Attention: Chris Kern	Lab Number: 404-1206	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	110	1,800
Ethyl Benzene.....	290	6,400
Methyl-t-Butyl Ether.....	2,900	N.D.
Toluene.....	290	N.D.
124 Trimethylbenzene.....	570	14,000
135 Trimethylbenzene.....	570	3,700
Xylene.....	860	20,000

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

4041205.ADV <5>



Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard
Sample Descript: Soil: F-9
Analysis Method: EPA 5030/8020
Lab Number: 404-1207

Sampled: Apr 18, 1994
Received: Apr 19, 1994
Analyzed: Apr 29, 1994
Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 18, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-10	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 29, 1994
Attention: Chris Kern	Lab Number: 404-1208	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

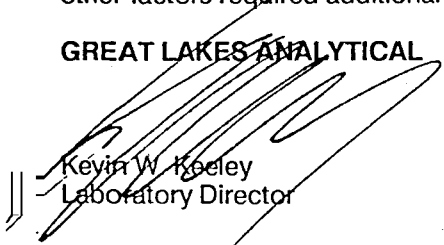
4041205.ADV <7>

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 18, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-11	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 29, 1994
Attention: Chris Kern	Lab Number: 404-1209	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	23
135 Trimethylbenzene.....	12	13
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Koeley
Laboratory Director

4041205.ADV <8>

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 18, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: E-6	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 30, 1994
Attention: Chris Kern	Lab Number: 404-1210	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	9.2	N.D.
Ethyl Benzene.....	23	77
Methyl-t-Butyl Ether.....	230	N.D.
Toluene.....	23	N.D.
124 Trimethylbenzene.....	46	150
135 Trimethylbenzene.....	46	130
Xylene.....	69	270

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

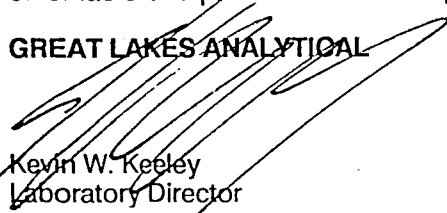
Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 19, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-12	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 30, 1994
Attention: Chris Kern	Lab Number: 404-1211	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

4041205.ADV <10>

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 19, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: F-10	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 30, 1994
Attention: Chris Kern	Lab Number: 404-1212	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	5.9
Ethyl Benzene.....	6.0	11
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	33
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	26

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 19, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-13	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 30, 1994
Attention: Chris Kern	Lab Number: 404-1213	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

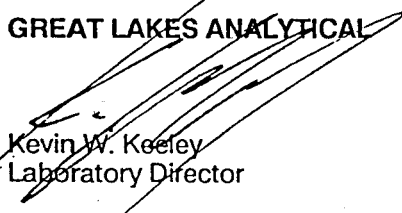
Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96084, Roettgens, Villard	Sampled: Apr 19, 1994
6100 W. Executive, Suite E	Sample Descript: Soil: W-14	Received: Apr 19, 1994
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 30, 1994
Attention: Chris Kern	Lab Number: 404-1214	Revised Report: May 9, 1994

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	6.0	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	6.0	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	18	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

Client: Advent Environmental Project: Roetgers, Thensville #96084 TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY < 24 HR.

Address: 6100 W Executive Dr Sampler: Chris Ken DATE RESULTS NEEDED: 4/26/94

Report to: Chris Ken PO #: Phone #: FAX #: TEMPERATURE UPON RECEIPT: ON ICE

AIR BILL NO. _____

FIELD ID, LOCATION		DATE COLLECTED	TIME COLLECTED	SAMPLE		PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE	SAMPLE CONTROL			LABORATORY ID NUMBER
				DEVICE	MATRIX					CRACKED/BROKEN	IMPROPERLY SEALED	GOOD CONDITION	
F-8	-	4/18	9:20	Soil					GRO PVOC PID=0			✓	4041205
E-5	-	4/18	9:25	"					" " PID=300			✓	4041206
F-9	-	4/18	10:35	"					" " PID=0			✓	4041207
W-10	-	4/18	1:15	"					" " PID=0			✓	4041208
W-11	-	4/18	1:30	"					" " PID=1			✓	4041209
E-6	-	4/18	2:30	"					" " PID=20			✓	4041210
W-12	-	4/19	9:15	"					" " PID=0			✓	4041211
F-10	-	4/19	9:30	"					" " PID=0			✓	4041212
W-13	-	4/19	9:35	"					" " PID=0			✓	4041213
W-14	-	4/19	10:00	"					" " PID=1			✓	4041214
Methanol Blank	-	4/19	10:00	-					" " PID=1			✓	4041215

RELINQUISHED <u>Chris Ken</u> 4/19/94 2:00	RECEIVED <u>Kevin Kroll</u> 4/19/94 14:00	RELINQUISHED	RECEIVED
DATE	DATE	DATE	DATE
TIME	TIME	TIME	TIME

COMMENTS: 5.9. Chris Ken - Project doc incorrect - should be Villard

PAGE 1 OF 1

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard

QC Sample Group: 4041205-1214

Reported: May 3, 1994

QUALITY CONTROL DATA REPORT

ANALYTE

Percent Solids

Method: 160.3
Analyst: A. Preshlock
Reporting Units: %
Date Analyzed: Apr 26, 1994
QC Sample #: BLK042694

Sample Conc.: N.D.

Spike Conc.
Added: 950

Conc. Matrix
Spike: 940

Matrix Spike
% Recovery: 99

Conc. Matrix
Spike Dup.: 880

Matrix Spike
Duplicate
% Recovery: 93

Relative
% Difference: 7.0

Laboratory blank contained the following analytes: None Detected

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery: $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

4041205 ADV <14>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard

QC Sample Group: 4041205-1215

Reported: May 3, 1994

QUALITY CONTROL DATA REPORT

ANALYTE

WGRO

Method: WGRO
Analyst: J. Wallace
Concentration: 2,000
Units: ng

MATRIX SPIKE DATA

Date Analyzed: Apr 29, 1994
Instrument I.D.# GC-5

Matrix Spike
% Recovery: 105

METHOD SPIKE & DUP. DATA

Date Analyzed: Apr 29, 1994
Instrument I.D.# GC-5

Method Spike
% Recovery: 110

Method Spike
Duplicate %
Recovery: 105

Relative %
Difference: 4.7

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

4041205.ADV <15>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Chris Kern

Client Project ID: 96084, Roettgens, Villard

QC Sample Group: 4041205-1214

Reported: May 3, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethylbenzene	Xylene
---------	---------	---------	--------------	--------

Method:	8020	8020	8020	8020
Analyst:	J. Wallace	J. Wallace	J. Wallace	J. Wallace
Concentration:	50	50	50	50
Units:	ng	ng	ng	ng

MATRIX SPIKE DATA

Date Analyzed:	Apr 30, 1994	Apr 30, 1994	Apr 30, 1994	Apr 30, 1994
Instrument I.D.#	GC-5	GC-5	GC-5	GC-5
Matrix Spike % Recovery:	96	98	106	100

METHOD SPIKE & DUPLICATE DATA

Date Analyzed:	Apr 30, 1994	Apr 30, 1994	Apr 30, 1994	Apr 30, 1994
Instrument I.D.#	GC-5	GC-5	GC-5	GC-5
Method Spike % Recovery:	92	94	96	98
Method Spike Duplicate % Recovery:	86	86	86	90
Relative % Difference:	6.7	8.9	11	8.5

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

4041205 ADV <16>

MAR 03 1994

ADVENT

ENVIRONMENTAL SERVICES, INC.

March 1, 1994

John Feeney
Wisconsin Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212

re: Soil remediation at the Roettgers, Villard Avenue site, 3709 W. Villard Avenue, Milwaukee, WI
Advent Project No. 96804.02

Dear John:

Advent proposes soil excavation and landfilling to remediate petroleum contaminated soils at the captioned site.

Review of Site Assessment

Advent's site assessment report (mailed to you in February 1994) defined the extent of petroleum contaminated soil at the site. Figure 1 indicates the extent of GRO contaminated soil. Contamination at concentrations sufficient to cause a PID response were typically detected to depths of 10-12 feet (Figure 2). Laboratory analysis of soil samples collected at the base of the borings (typically 21 feet) indicate GRO concentration of less than 5 ppm under the "hot spot" of the contaminated area.

Several borings were completed to investigate the presence of contamination in the former fuel oil UST location. DROs were detected in boring B-4 at a concentration of 16 ppm. All other samples collected in borings completed in this area did not contain DRO contamination at concentrations exceeding laboratory detection limits.

Groundwater was not encountered in the borings which were completed to a maximum depth of 51 feet.

Soil Remediation Proposal

Advent proposes excavating GRO contaminated soil from the site in an area indicated on Figure 3. The excavation would extend to a depth of approximately 12 feet, or to depths where field screening with a PID no longer detected VOCs. This proposed excavation would leave areas of contaminated soil on site. One area extends beneath 37th Street an unknown distance. The second area, with estimated concentrations below 100 ppm, extends beneath the pump island, UST piping run, and canopy area at the site. Remaining soil contamination at the site would be largely immobile in the clay soils at the site and would not constitute a hazard to groundwater or human health because of the depth to groundwater.

Page Two

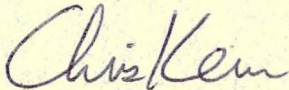
Excavation is not planned for the low level detect from the former fuel oil UST location. Lack of other detects in adjacent borings indicate that this contaminated area is of limited extent.

Advent estimates that approximately 1,400 cubic yards or 2,200 tons of contaminated soil is present in the area to be excavated. Analysis of remedial options for the PECFA program indicate this remedial option to be the lowest cost.

Please call me at (414) 238-1874 ext. 3018 if you have any further questions.

Sincerely,

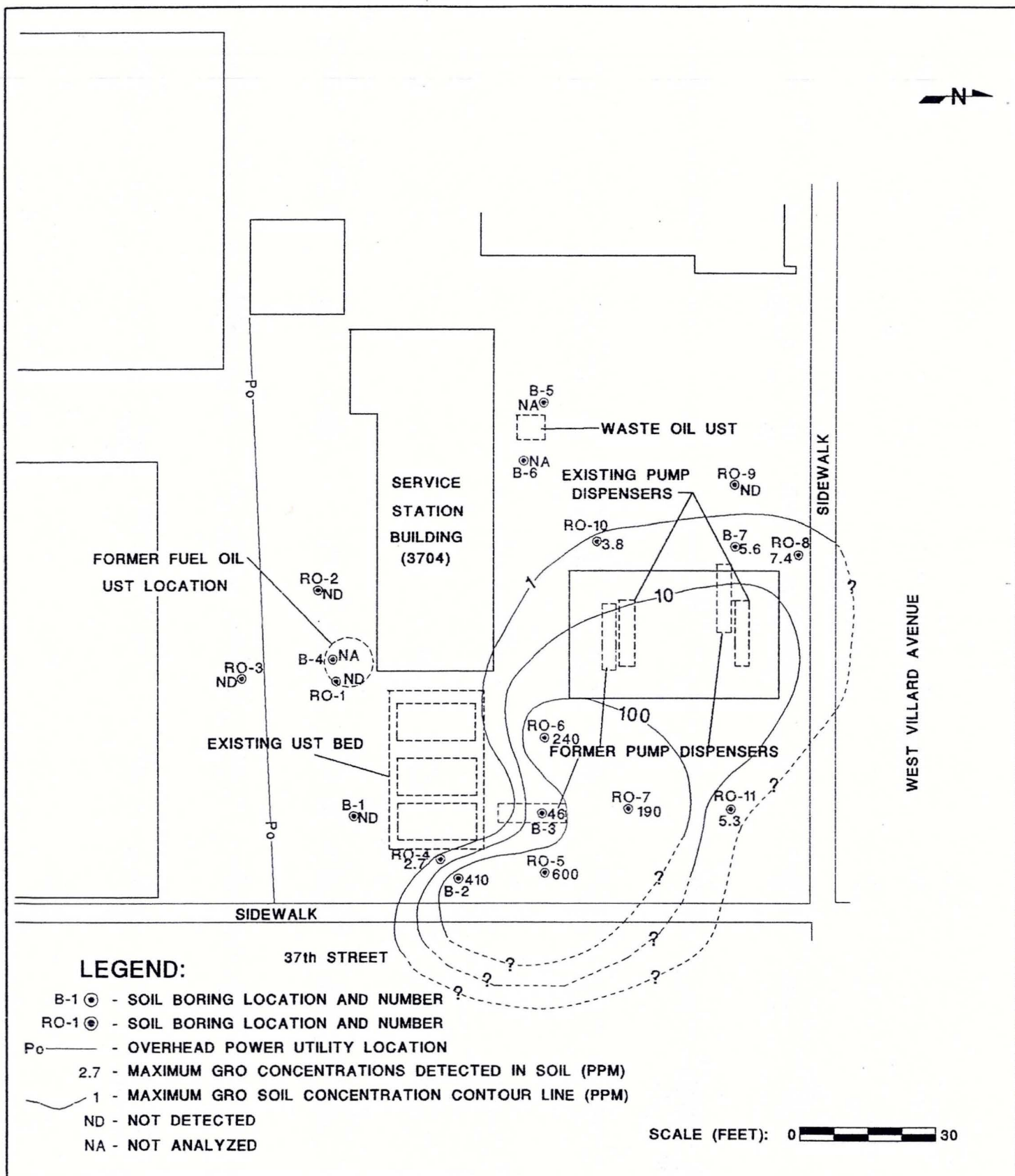
ADVENT ENVIRONMENTAL SERVICES, INC.

A handwritten signature in cursive script that reads "Chris Kern".

Chris A. Kern, C.P.G.
Hydrogeologist

cak:jad

cc: Mr. Don Roettgers, 5169 N. 37th Street, Milwaukee, WI 53209
Mr. Dave Roettgers c/o Weiss, Berzowski, Brady, & Donahue, 700 N. Water Street, Milwaukee,
WI 53202-4273



**FIGURE 1 EXTENT OF GRO
CONTAMINATED SOIL (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN**

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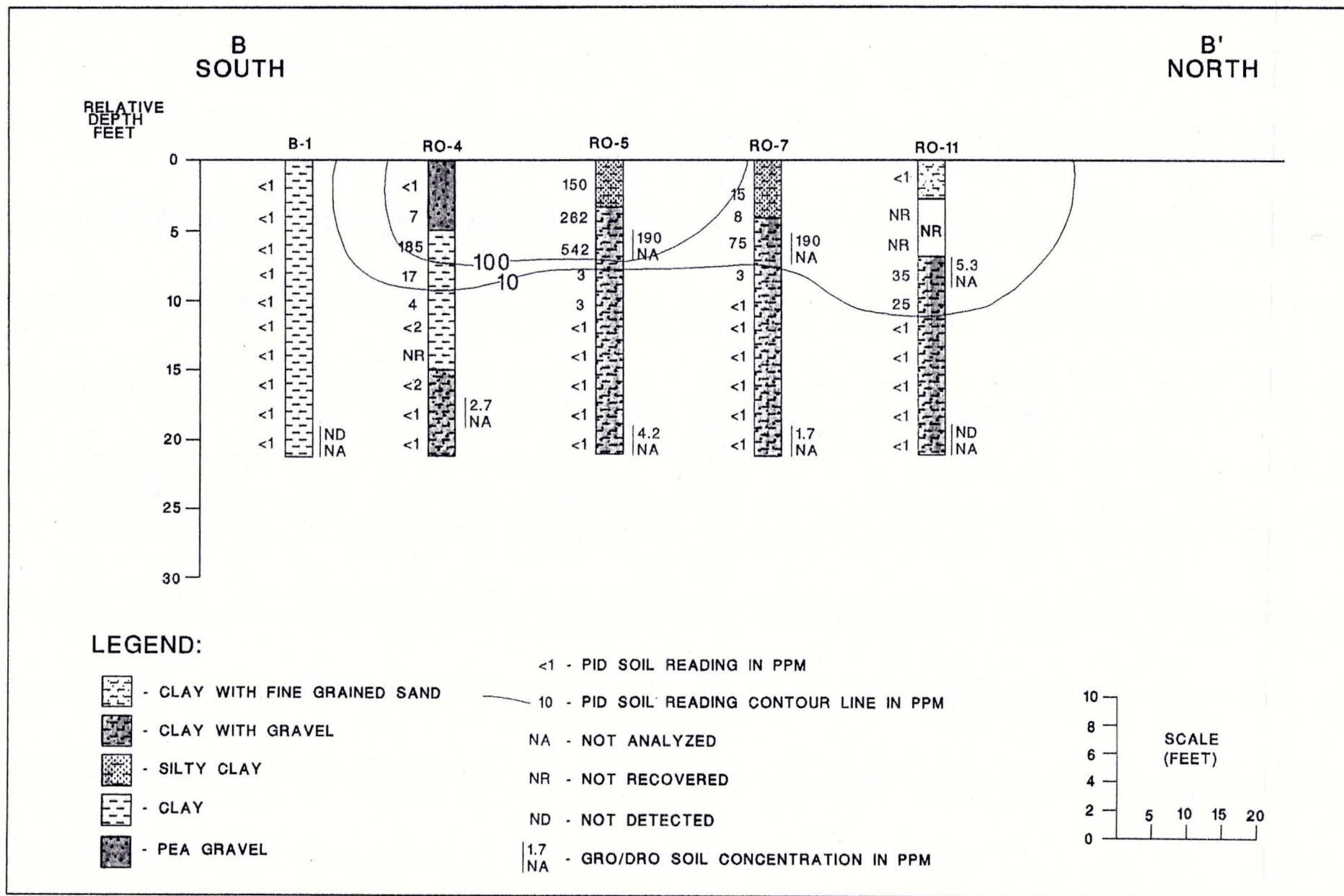
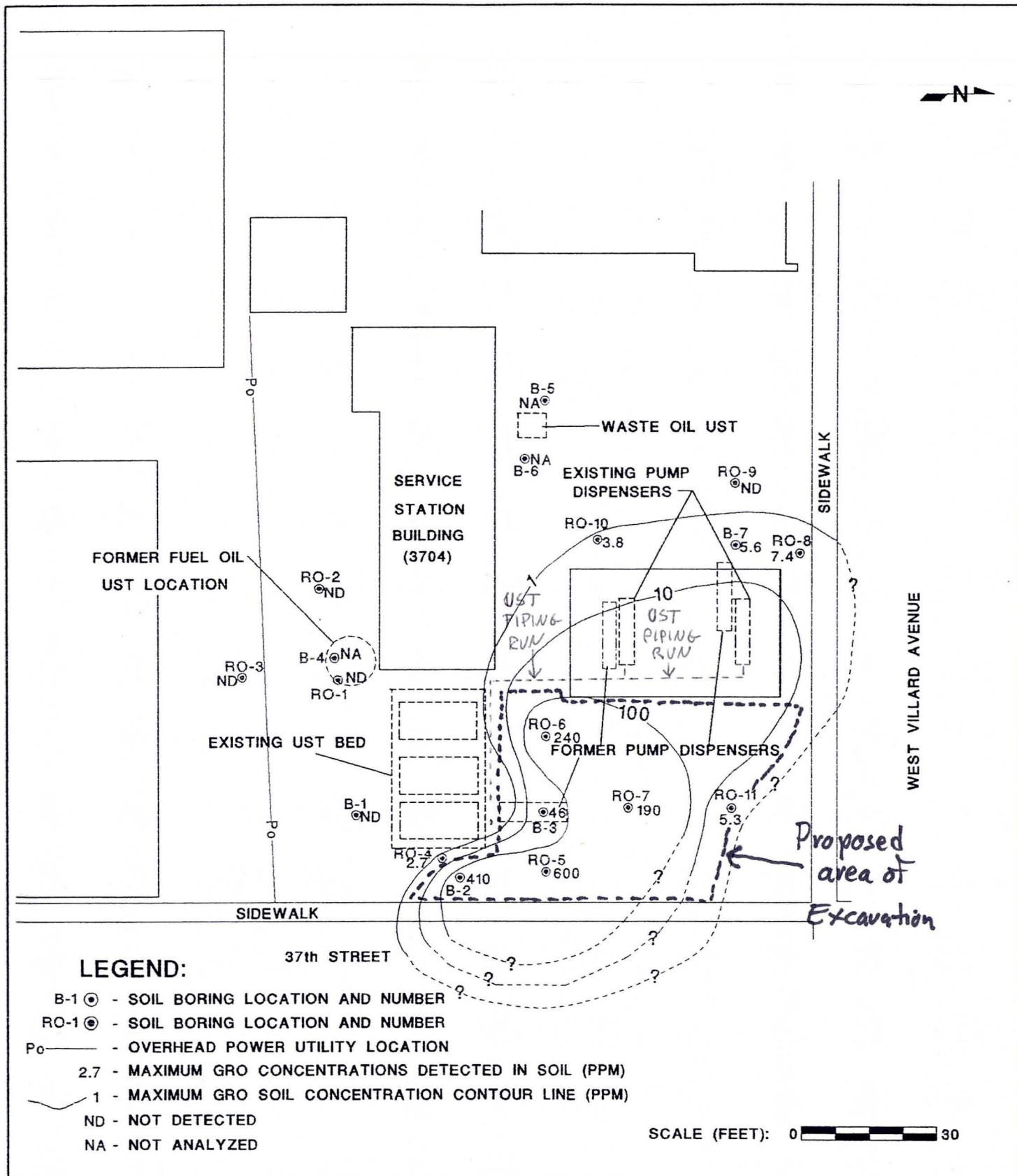


FIGURE 2 SOUTH TO NORTH PEDOLOGIC CROSS-SECTION B-B'
37th AND VILLARD
MILWAUKEE, WISCONSIN

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**FIGURE 3 EXTENT OF GRO
CONTAMINATED SOIL (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN**

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ADVENT

ENVIRONMENTAL SERVICES, INC.

November 17, 1993

Mr. Don Roettger
Roettgers Oil
5169 N. 37th Street
Milwaukee, WI 53209

Dear Mr. Roettger:

Enclosed is a the Phase III Environmental Assessment for the Roettgers Oil Site, 3709 W. Villard Avenue, city of Milwaukee, Milwaukee County, Wisconsin, Advent project No. 96804.

Upon your approval, a copy of the assessment will be submitted to the Wisconsin Department of Natural Resources at the following address:

Ms. Sibyl Lapinski
Wisconsin Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212

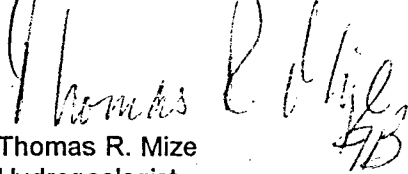
Upon your approval, Advent will submit a copy of this report to the following agency when the first PECFA claim is filed:

Wisconsin Department of Industry, Labor and Human Relations
Bureau of Petroleum Inspection and Fire Protection
P.O. Box 7969
Madison, WI 53707

The WDNR will review the assessment and based on the contaminant levels identified and the specific features of the site, a decision will be made on whether further action or investigation is required.

If you have any questions regarding these results, please do not hesitate to contact Advent.

Sincerely,
ADVENT ENVIRONMENTAL SERVICES, INC.


Thomas R. Mize
Hydrogeologist

Phase III
Environmental Assessment
for the
Roettgers Oil Site
3709 West Villard Avenue
City of Milwaukee
Milwaukee County, Wisconsin

November 1993

Prepared for
Mr. Don Roettgers

A D V E N T
Environmental Services, Inc.
6100 W. Executive Drive, Suite E
Mequon, Wisconsin 53092
Advent Project No. 96804

Phase III
Environmental Assessment
for the
Roettgers Oil Site
3709 W. Villard Avenue
City of Milwaukee
Milwaukee County, Wisconsin

Prepared By:

Thomas R. Mize
Thomas R. Mize
Hydrogeologist
Advent Environmental Services, Inc.

Date: 11/17/93

Reviewed By:

Stephen G. Reuter
Stephen G. Reuter, C.P.G.
AIPG Certificate No. 7836
Senior Hydrogeologist
Advent Environmental Services, Inc.

Date: 11/17/93

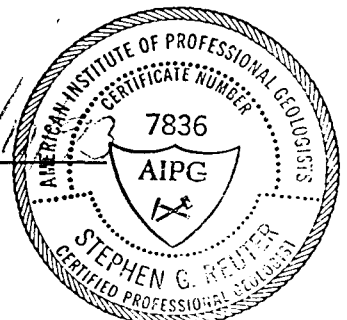


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- G. PID Calibration Documentation
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ABBREVIATIONS

AST	aboveground storage tank
DRO	diesel range organic
ES	Enforcement Standard
GRO	gasoline range organic
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
ppb	parts per billion
ppm	parts per million
PVOC	petroleum volatile organic compound
QC	quality control
TCLP	toxicity characteristic leaching procedure
TRPH	total recoverable petroleum hydrocarbons
UST	underground storage tank
VOC	volatile organic compound
WDILHR	Wisconsin Department of Industry, Labor and Human Relations
WDNR	Wisconsin Department of Natural Resources
WDOT	Wisconsin Department of Transportation

1.1 Findings and Conclusions

Advent Environmental Services, Inc. has completed a Phase III Environmental Assessment for the Roettgers Oil site located at 3709 West Villard Avenue in the city of Milwaukee, Milwaukee County, Wisconsin. This assessment was conducted from March 30 to April 2, 1993, for Mr. Don Roettger, site owner.

This assessment revealed:

- The Roettgers Oil site is an approximately 0.4-acre lot with a one-story structure used as a retail gasoline station.
- The site history revealed that the site has been an automobile service and fuel station from 1981 to 1989 and an automobile fuel station from 1989 to the present. A fuel oil underground storage tank (UST) was installed near the southeast corner of the building and was removed in 1984. A 1,000-gallon waste oil UST installed in approximately 1968 is located approximately 10 feet north of the garage, is currently not in use, and will be removed. In 1989, four leaded gasoline USTs of unknown size were removed and replaced with one 8,000-gallon and two 4,000-gallon unleaded gasoline USTs; three former pump islands were removed and replaced with two pump islands.
- Neighboring properties are used for commercial and residential purposes.

- Eleven soil borings were drilled during this Phase III assessment to determine the horizontal and vertical extent of subsurface contamination. Depths of the borings ranged from 21 to 51 feet. Groundwater was not encountered in any of the borings.
- Field screening of soil samples from five borings with a photoionization detector (PID) indicated the presence of volatile organic compounds (VOCs) in excess of background levels at the site. Levels of PID detects ranged from <1 to 565 parts per million [ppm (benzene equivalent instrument units)].
- Selected soil samples collected from the borings were chemically analyzed for appropriate parameters including gasoline range organics (GROs), diesel range organics (DROs), total lead, polychlorinated biphenyls (PCBs), and petroleum volatile organic compounds (PVOCs).
- Two soil samples were collected and analyzed for disposal parameters including polychlorinated biphenyls (PCBs), flash point, pH, toxicity characteristic leaching procedure (TCLP) benzene, and TCLP lead.
- GROs were detected at concentrations above laboratory detection limits in soil samples collected from seven borings completed in the vicinity of the gasoline UST system. Concentrations ranged from 1.2 to 600 ppm.
- DROs were not detected at concentrations above laboratory detection limits in soil samples collected from three borings completed in the vicinity of the fuel oil UST system.

- Total lead was detected in all soil samples analyzed but at concentrations below levels that are considered to have the potential to exceed regulated levels and within the range of naturally occurring concentrations.
- PVOCs were detected in soil samples collected from the 11 borings completed at the site at concentrations above laboratory detection limits. Compounds detected included benzene at levels ranging from 190 to 430 parts per billion (ppb); ethylbenzene from 6 ppb to 4,900 ppb; toluene from 2.6 to 490 ppb, 1,2,4-trimethylbenzene from 16 to 14,000 ppb, 1,3,5-trimethylbenzene from 15 to 4,000 ppb, and xylene from 7.5 to 15,000 ppb. There are presently no regulated levels for PVOCs in soil.
- PCBs were not detected in soil samples above laboratory detection limits.
- TCLP benzene was not detected in soil samples above laboratory detection limits.
- Analysis of a representative soil sample for geotechnical parameters determined that the soils at the site are a lean clay with sand, with a Unified Soil Classification of CL. The representative sample was 21.2% sand, 29.6% silt, and 49.2% clay.
- Groundwater was not encountered in any of the borings.

1.2 Recommendations

Advent recommends that the petroleum-impacted soils at the Roettgers Oil site be treated by the most cost-effective technology available. Based on field observations and analytical results of soil collected at the Roettgers Oil site, current technologies that may be appropriate include: active in-situ soil venting, excavation with thermal treatment, or excavation and landfilling at a WDNR-approved facility.

Based on similar sites, Advent believes that excavation and landfill disposal will likely be the most efficient strategy that can be developed and implemented to remediate the petroleum-impacted soil at the Roettgers Oil site. The data collected to date suggest that significantly impacted soil is limited to the clays and silty clays present from the surface to approximately nine feet below ground surface. The demonstrated vertical extent of impacted soil suggests that groundwater has not been impacted at the site.

If excavation and landfill disposal is the approved remediation option, an estimated 1,400 cubic yards (approximately 2,240 tons) of impacted soil will be removed and transported to a WDNR approved landfill for disposal. Impacted soil beneath 37th Street and Villard Avenue that cannot be removed by standard excavation methods is capped by pavement and does not pose a significant threat to human health and safety. The impermeable nature of the native clay soils at the site will likely impede further migration of contaminants since the source and the most heavily contaminated soil will have been removed. Impacted soil beneath 37th Street and Villard Avenue will be further isolated by installing an impermeable membrane along the east and north walls of the excavation prior to backfilling.

Active or passive bioremediation does not appear to be a likely candidate for successful remediation due to the predominance of clay material at the site.

Remediation of the soil by soil venting is likely not practical due to the impervious nature of the soils that will limit the vacuum radius of influence resulting in a remediation system design likely to require a level of effort that will make soil venting economically undesirable for this site.

At the client's request, Advent will prepare a detailed cost comparison of alternative remediation technologies as required by ILHR 47 to ensure selection of the most cost-effective remediation strategy and maintain the client's eligibility for reimbursement under the Petroleum Environmental Cleanup Fund Act (PECFA).

Section Two

SITE INVESTIGATION

2.1 Purpose and Scope

The Roettger's Oil site is located at 3709 West Villard Avenue in the city of Milwaukee, Milwaukee County, Wisconsin (see Figure 2-1). Petroleum-impacted soil was identified by a Phase II environmental assessment conducted at the site in July 1992 by Advent.

The purpose of Advent's Phase III Environmental Assessment was to define the horizontal and vertical extent of environmental contamination previously identified at the site that may be associated with the existing gasoline UST system and the previous fuel oil UST that was removed from the site in 1984. The assessment for this site consisted of the following:

- Review of all site background information;
- Review of topographic maps, soil and bedrock identification maps, and other sources of information regarding the physical characteristics and natural history of the site;
- Completion of 11 soil borings to a maximum depth of 51 feet;
- Collection of subsurface soil samples using a split spoon sampler and soil description according to the Unified Soil Classification System;
- Field screening of subsurface soil samples for VOCs with a PID using the headspace analysis method;
- Collection of 26 subsurface soil samples for chemical analysis; and
- Chemical analyses of 26 subsurface soil samples for GROs, DROs, total lead, and PVOCs. Two soil samples were analyzed for waste disposal parameters (flash point, pH, free liquids, specific gravity, TCLP lead, TCLP benzene, and PCBs).

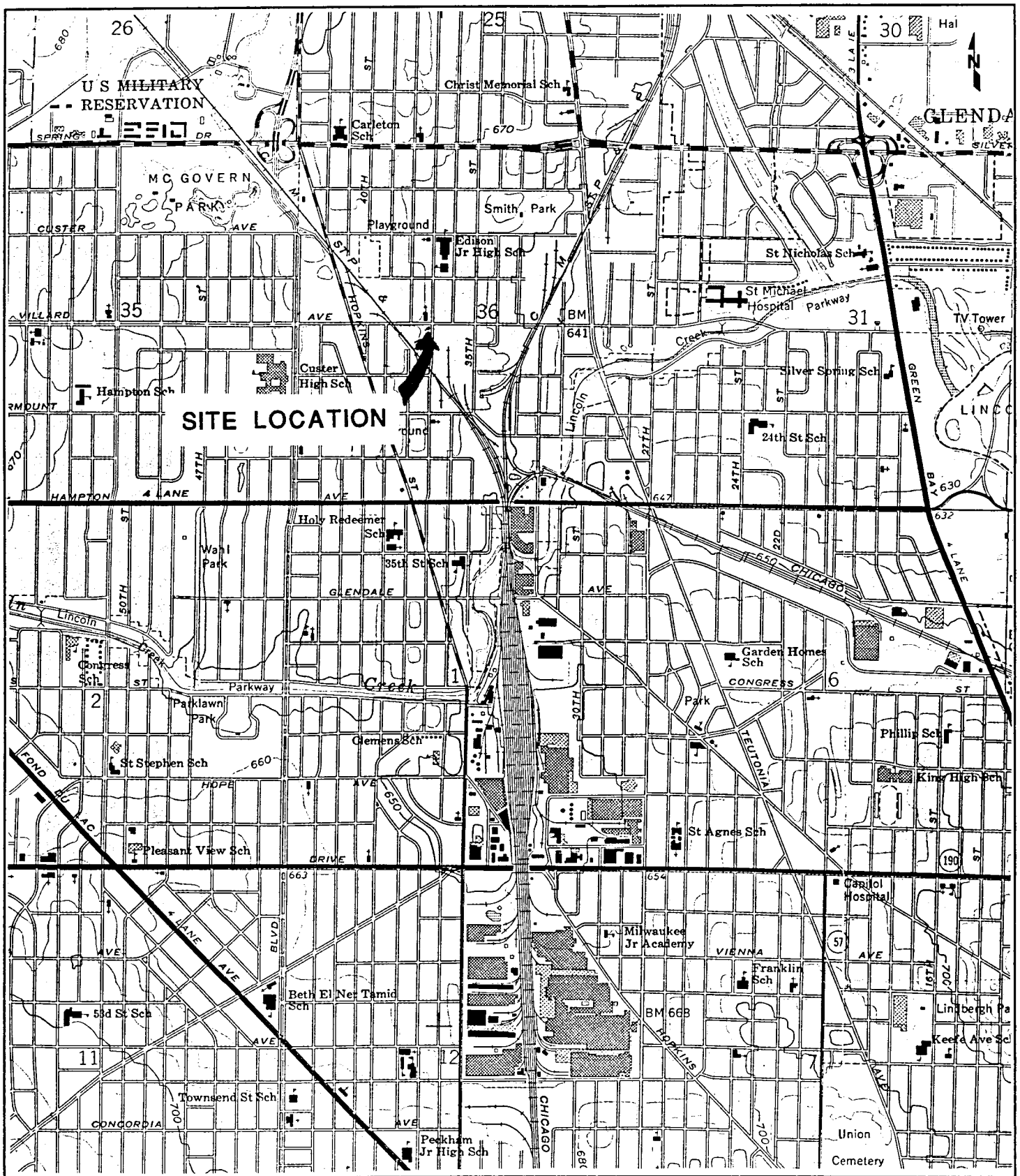


FIGURE 2-1 SITE LOCATION
37th AND VILLARD SITE
MILWAUKEE, WISCONSIN



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- Collection of one soil sample for analysis of geotechnical parameters including Atterberg Limits and Gradation Analysis.

Summary of Previous Work

On July 7, 1992, Advent completed seven soil borings at depths ranging from 11 to 21 feet at the Roettgers Oil site as part of a Phase II Environmental Assessment. A letter-report was prepared after the completion of this assessment for Weiss, Berzowski, Brady and Donohue, attorneys at law. Laboratory analysis of soil samples collected from soil borings B-2 and B-3 located around the gasoline UST bed detected GROs at concentrations of 46 and 410 ppm respectively. Laboratory analysis of the soil sample collected from soil boring B-4 located in the fuel oil UST bed detected DROs at a concentration of 16 ppm. Because GRO and DRO concentrations detected in soil borings B-2, B-3, and B-4 exceed the 10 ppm Wisconsin Department of Industry, Labor and Human Relations (WDILHR) remedial action guideline for petroleum-impacted soil, a Responsible Party letter was issued by the WDNR to Mr. Don Roettger on March 2, 1993. A copy of the Phase II report and Responsible Party letter is included in Appendix A.

Advent conducted a Phase III Environmental Assessment from March 30 to April 2, 1993, to determine the lateral and vertical extent of the contamination identified during the Phase II investigation. The results of this Phase III investigation is the subject of this report.

2.2 Site Reconnaissance Observations

The Roettgers Oil site is located in a commercial/residential district of the city of Milwaukee, Wisconsin. The site is bound on the east by 37th Street, on the north by West Villard Avenue, and on the south and west by commercial property lines. Lincoln Creek lies approximately 3,000 feet southeast of the site (Figure 2-2).

There is one building on the site. This building is currently used for selling automobile fuel. See Figure 2-2 for site features. Photographs of the site are provided in Appendix B. During completion of soil boring RO-8, a city water service lateral was encountered at a depth of approximately nine feet. Due to the proximity of the water line to the dispenser island, soils excavated to repair the water lateral were field screened with a PID. A PID response above background was observed, so approximately 30 cubic yards of soil excavated to repair the water lateral was stockpiled within an impermeable membrane on-site. A composite soil sample designated "STOCKPILE" was collected from the excavated soils and analyzed for GROs and PVOCs. These soils can be incorporated into future remediation activities at the site.

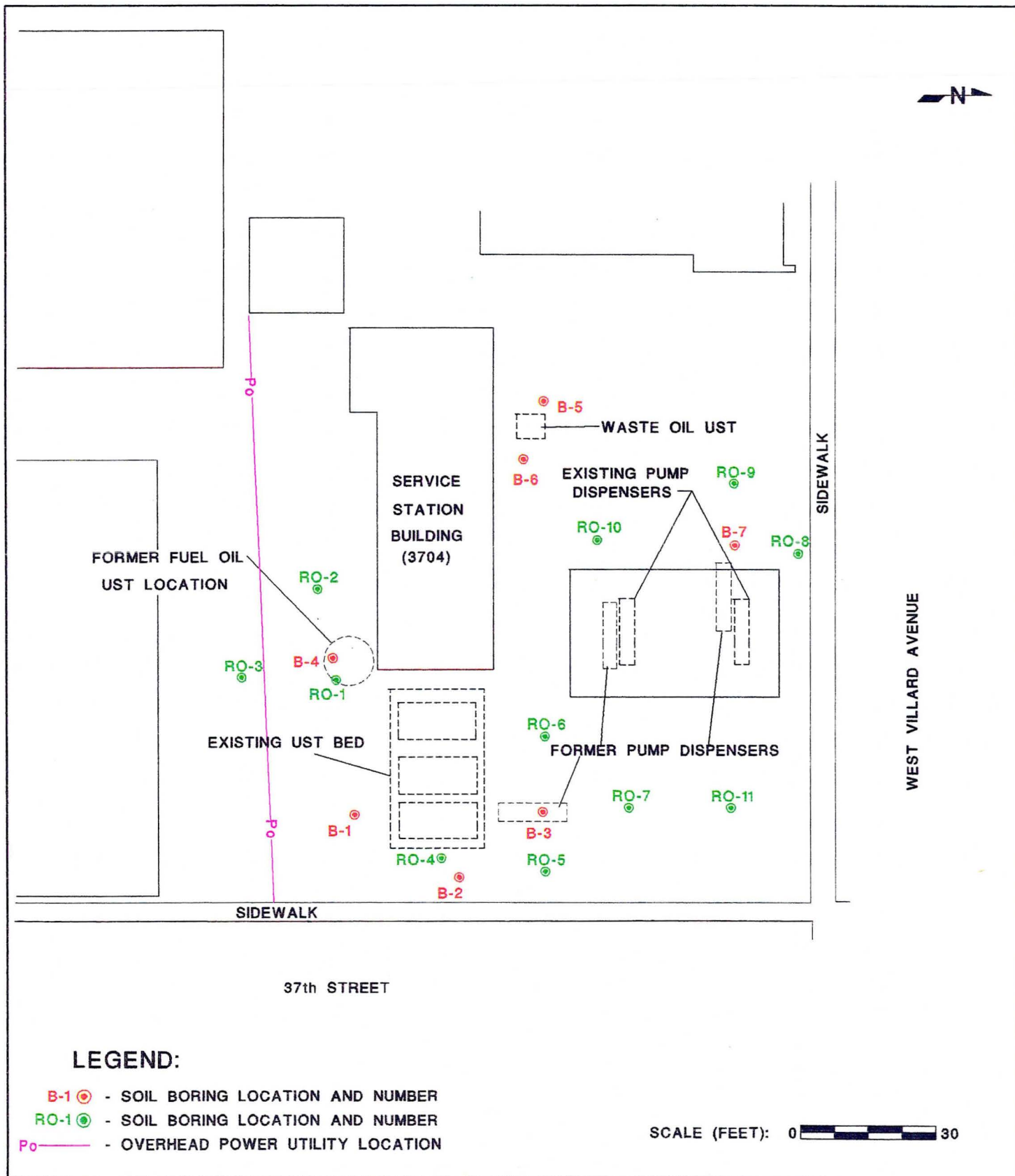


FIGURE 2-2 SITE FEATURES
37th AND VILLARD
MILWAUKEE, WISCONSIN

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2.3 Site History

Interviews were conducted to gather information concerning past and present land uses of the Roettgers Oil site and the potential environmental impact of these activities.

Thomas R. Mize of Advent conducted a telephone interview with the following individual on May 11, 1993:

Mr. Don Roettger, site owner
5169 N. 37th Street
Milwaukee, WI 53209
(414) 466-0890

Mr. Roettger stated that he does not know who owned the property prior to 1917. In 1917, Mr. Henry Roettger purchased this property and constructed a one-story office building. This office building served as a base of operations for Roettgers Fuel and Supply. In 1981, Mr. Don Roettger obtained ownership of the site and operated the site as an automobile fuel and service station. In 1989, automobile repair activities at the site were discontinued. The site operated as an automobile fuel station from 1989 to the present.

Table 2-1 shows the ownership history of the Roettgers Oil site.

Table 2-1 Roettgers Oil Site History		
Time Period	Owner	Site Activity
Prior to 1917	Unknown	Undetermined
1917 to 1981	Mr. Henry Roettger	one-story office building operated as Roettgers Fuel and Supply
1981 to 1989	Mr. Don Roettger	operated as an automobile fuel and service station
1989 to present	Mr. Don Roettger	operated as an automobile fuel station

2.4 Site Geology

The Roettgers Oil site is located in the Eastern Ridges and Lowlands Physiographic Province of southeastern Wisconsin. The regional topography surrounding this site has been determined primarily by glaciation. The site is situated on ground moraine and end moraine deposits that were deposited by the Valdern-aged Lake Michigan lobe of the Wisconsin ice sheet. Ground and end moraine deposits typically consist of poorly sorted sands, silts, and clays. Soils encountered in split spoon samples at the site consisted primarily of clay with some gravel.

According to the soil survey of Milwaukee and Waukesha Counties, a detailed soil survey by the United States Department of Agriculture Soil Survey has not been feasible because natural soils within the area have been greatly disturbed by development activities; therefore, the natural soil boundaries could not be easily recognized or plotted.

Well logs obtained from the Wisconsin Geologic and Natural History Survey indicate that bedrock at the site area is buried at depths of 80 to 200 feet by glacial material. Bedrock was not encountered in the soil borings during the site investigation. Maximum depth of these borings was 51 feet. Regionally, bedrock consists of Paleozoic era dolomite of the Silurian period.

According to the Natural History Survey well logs, groundwater occurs at depths of 75 to 85 feet in the area (see Appendix C). Surface topography suggests that groundwater is flowing toward the Lincoln Creek, which is located approximately 3,000 feet southeast of the site. Because groundwater was not encountered at this site, direction of groundwater flow could not be determined.

2.5 Sampling Procedures and Locations

Stephen G. Reuter of Advent supervised the collection of samples from borings RO-1 to RO-11 completed from March 30 to April 2, 1993. Groundwater was not encountered in any of the borings on-site; therefore, groundwater monitoring wells were not installed.

A total of 26 subsurface soil samples were collected from borings completed at the site to define the nature and extent of petroleum soil contamination and to determine soil type.

Locations of soil borings were influenced by buried and overhead utilities, existing structures, vegetation, and city streets in this urban location. See Table 2-2 for sampling rationale, depth, and location. See Figure 2-2 for soil boring/monitoring well locations and Appendix B for site photographs showing locations of soil borings.

The procedures followed for collecting soil samples and field screening of samples are included in Appendix D. See Appendix E for boring abandonment procedures and boring abandonment documentation. Appendix F contains the soil sample chain of custody documentation and procedures for maintaining sample security, identification, and integrity.

Table 2-2

Sampling Rationale, Depth, and Sample Locations
Soil

Sample Number	Boring	Depth (feet)	Location Rationale	Sampling Rationale
ROS-1A	RO-1	31-33	Define extent of contamination within former fuel oil UST location.	Soil sample characteristic of soils encountered in boring.
ROS-1B	RO-1	49-51	Define extent of contamination within former fuel oil UST location.	Deepest sample collected in boring.
ROS-1C	RO-1	9-11	Define extent of contamination within former fuel oil UST location.	Depth correlative to bottom of former tank.
ROS-2A	RO-2	15-17	Define extent of contamination directly adjacent to fuel oil UST location.	Depth correlative to DRO detect in tank bed.
ROS-2B	RO-2	23-25	Define extent of contamination directly adjacent to former fuel oil UST location.	Deepest sample collected in boring.
ROS-3A	RO-3	9-11	Define extent of contamination directly adjacent to former fuel oil UST location.	Depth correlative to base of former tank.
ROS-3B	RO-3	17-19	Define extent of contamination directly adjacent to former fuel oil UST location.	Soil sample characteristic of deep soils in boring.
ROS-4A	RO-4	17-19	Define extent of contamination east of existing UST bed.	Confirm vertical extent of impacted soil.
ROS-5A	RO-5	5-7	Define extent of contamination east of former pump island.	Highest PID response in boring.
ROS-5A duplicate	RO-5	5-7	Define extent of contamination east of former pump island.	WDNR-mandated duplicate sample.
ROS-5B	RO-5	19-21	Define extent of contamination west of former pump island.	Confirm vertical extent of contamination. Deepest sample collected in boring.
ROS-6A	RO-6	5-7	Define extent of contamination north of existing UST bed and west of former pump island.	Highest PID response sampled.
ROS-6B	RO-6	19-21	Define extent of contamination north of existing UST bed and west of former pump island.	Deepest sample collected in boring.
Fuel Oil	—	—	Drummed soil.	Composite for waste disposal parameters.
ROS-7A	RO-7	5-7	Define extent of contamination north of former pump island and east of present pump islands.	Highest PID response in boring.
ROS-7B	RO-7	19-21	Define extent of contamination north of former pump island and east of present pump islands.	Confirm vertical extent of contamination. Deepest sample collected in boring.
ROS-8B-A	RO-8	9-11	Define extent of contamination north of existing pump islands.	Depth correlative to GRO detect near pump island.
ROS-8B-B	RO-8	19-21	Define extent of contamination north of existing pump islands.	Confirm vertical extent of contamination. Deepest sample collected in boring.
ROS-8B-B duplicate	RO-8	19-21	Define extent of contamination north of existing pump islands.	WDNR-mandated duplicate sample.
ROS-9A	RO-9	9-11	Define extent of contamination west of existing pump islands.	Depth correlative to GRO detect near pump island.
ROS-9B	RO-9	19-21	Define extent of contamination west of existing pump islands.	Deepest sample collected in boring.

Table 2-2 (continued)

Sampling Rationale, Depth, and Sample Locations
Soil

Sample Number	Boring	Depth (feet)	Location Rationale	Sampling Rationale
ROS-10A	RO-10	9-11	Define extent of contamination west of existing pump island	Correlative to GRO detect near pump islands.
ROS-10B	RO-10	19-21	Define extent of contamination east of existing pump island	Deepest sample collected in boring.
ROS-11A	RO-11	7-9	Define extent of contamination east of existing pump island.	Highest PID response in boring.
ROS-11B	RO-11	19-21	Define extent of contamination east of existing pump island.	Confirm vertical extent of contamination. Deepest sample collected in boring.
Stockpile	—	—	Composite sample.	Composite sample for disposal parameters.

2.6 Analytical Results

This section summarizes results of screening soil samples in the field for VOCs; chemical analyses of soil samples for GROs, DROs, PVOCs, total lead, TCLP benzene, TCLP lead, PCBs, flash point, and pH.

Results of Field Screening

Subsurface soil samples were screened for VOCs with a calibrated PID immediately after the split spoon sampling tube was opened (see Appendix G for PID calibration documentation) and during excavation of soils to repair a water service line in the vicinity of the dispenser island. A summary of field screening results of subsurface soil samples is as follows:

- Subsurface soil samples from five borings yielded a PID headspace response above background levels.
- Subsurface soil samples from six borings yielded a PID headspace response of <1 ppm (benzene equivalent instrument units).
- Field screening soil excavated to repair a water service line in the vicinity of the dispenser islands yielded a PID headspace response above background levels.

Figure 2-3 illustrates the estimated extent of contaminated soil based on PID response. This figure shows the maximum PID detect in each boring for soil samples collected above groundwater. West-east and south-north cross sections illustrate the estimated vertical extent of the contaminated soil based on PID data (Figure 2-4 and

Figure 2-5). Soil types logged from the split spoon samples are included in the cross sections.

All PID responses relative to depth for each boring completed at the Roettgers Oil site are recorded on soil profile logs (see Appendix H). Also recorded on the soil logs are sediment type, amount of sediment recovery in the split spoon samples, and the number of blow counts required to advance the sampling spoon. Appendix H also includes the WDNR monitoring well construction reports and the monitoring well development forms.

Soil drill cuttings that had PID detects of >1 ppm benzene equivalent instrument units were drummed on-site. Soil excavated to repair a water service line that yielded a PID response above background was stockpiled within an impermeable membrane on-site. See Appendix I for location of stockpiled and drummed investigative waste. Drill cuttings that did not yield a PID response above background levels were dispersed on-site.

Analytical Methods Utilized for Chemical Analyses of Samples

Great Lakes Analytical Labs of Buffalo Grove, Illinois, analyzed the soil samples collected at the Roettgers Oil site. Samples were chemically analyzed using the analytical methods listed in Appendix J. Each analytical method follows specific quality control (QC) criteria listed in the reference manual describing the method. This includes the selection and calibration of appropriate instruments and the use of QC samples. Daily performance tests and the demonstration of precision and accuracy in the laboratory are required.

Results of Chemical Analyses of Samples

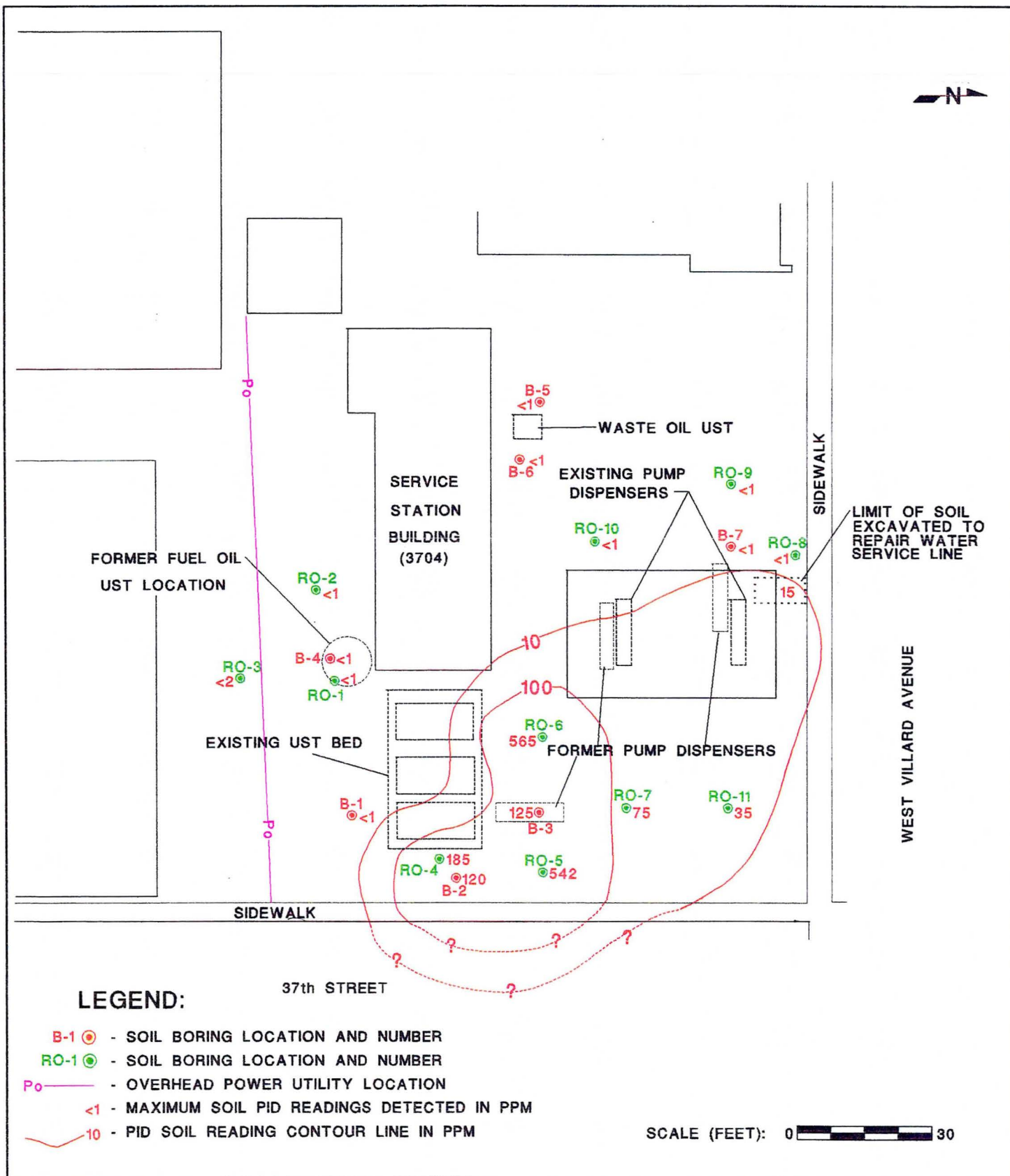
Soil Samples

Chemical analyses of 26 soil samples yielded the following results:

- GROs were detected at concentrations above laboratory detection limits in soil samples collected from seven borings completed in the vicinity of the gasoline UST system. Concentrations ranged from 1.2 to 600 ppm. Figure 2-6 illustrates the estimated extent of soil GRO contamination from laboratory analyses of collected soil samples.
- DROs were not detected at concentrations above laboratory detection limits in soil samples collected from three borings completed in the vicinity of the fuel oil UST system.
- Total lead concentrations above laboratory detection levels were detected in all samples analyzed ranging from 13 ppm to 20 ppm.
- PVOC compounds were detected in soil samples collected from each of the 11 borings. Benzene concentrations ranged from 190 to 430 ppb, ethylbenzene concentrations ranged from 6 to 4,900 ppb, toluene concentrations ranged from 2.6 to 490 ppb, 1,2,4-trimethylbenzene concentrations ranged from 16 to 14,000 ppb, 1,3,5-trimethylbenzene concentrations ranged from 15 to 4,000 ppb, and xylene concentrations ranged from 7.5 to 15,000 ppb.
- Results of laboratory analyses of two samples for disposal parameters detected no presence of PCBs or TCLP benzene at concentrations above laboratory detection limits; a flash point of >200°F; no free liquids; a pH of 9.6 and 9.8, and TCLP lead concentrations of 0.0085 and 0.013 ppm.

Results of analysis of a representative soil sample for geotechnical parameters determined that soils at the site are a lean clay with sand with a Unified Soil Classification of CL. Soil at the site is 21.2% sand, 29.6% silt, and 49.2% clay.

Table 2-3 contains summarized results of the chemical analyses of the assessment soil samples collected from the borings. Table 2-4 contains summarized results of the disposal parameter analyses. Copies of laboratory data reports are provided in Appendix J. All analyses are reported on a dry-weight basis.



**FIGURE 2-3 MAXIMUM PID READINGS
DETECTED IN SOIL BORINGS (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN**

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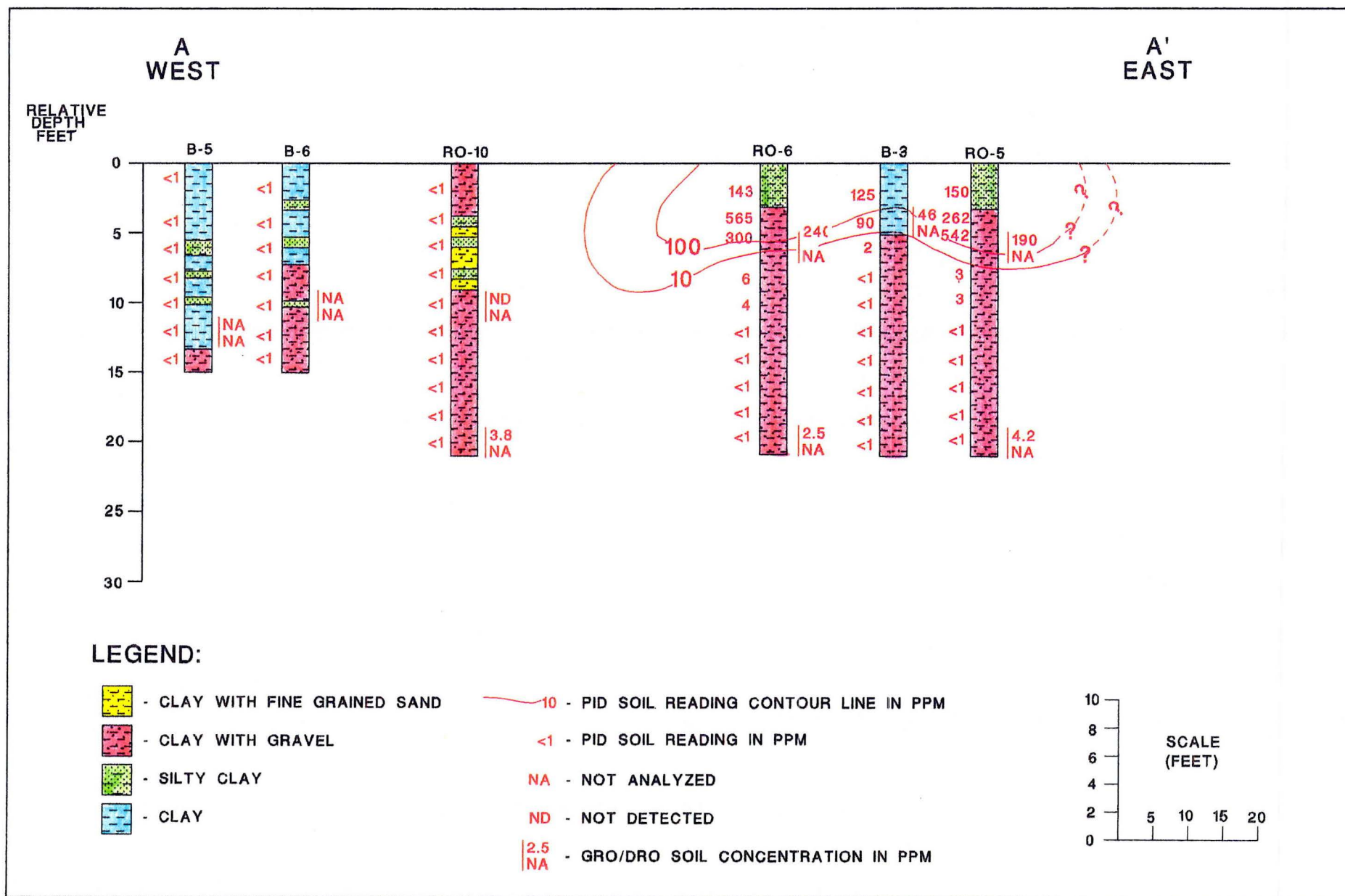


FIGURE 2-4 WEST TO EAST PEDOLOGIC CROSS-SECTION A-A'
37th AND VILLARD
MILWAUKEE, WISCONSIN

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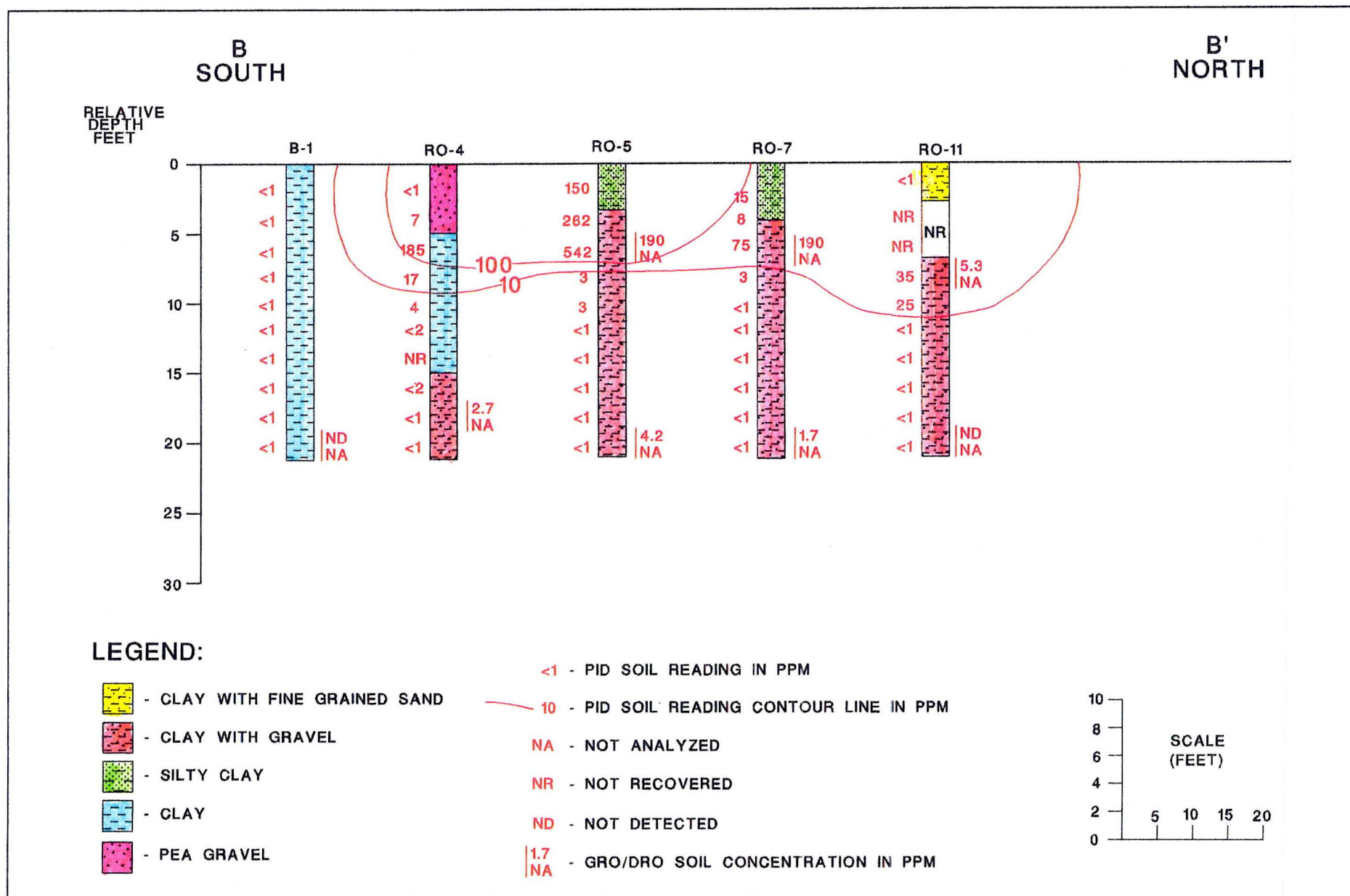


FIGURE 2-5 SOUTH TO NORTH PEDOLOGIC CROSS-SECTION B-B'
37th AND VILLARD
MILWAUKEE, WISCONSIN

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ENVIRONMENTAL SERVICES, INC.
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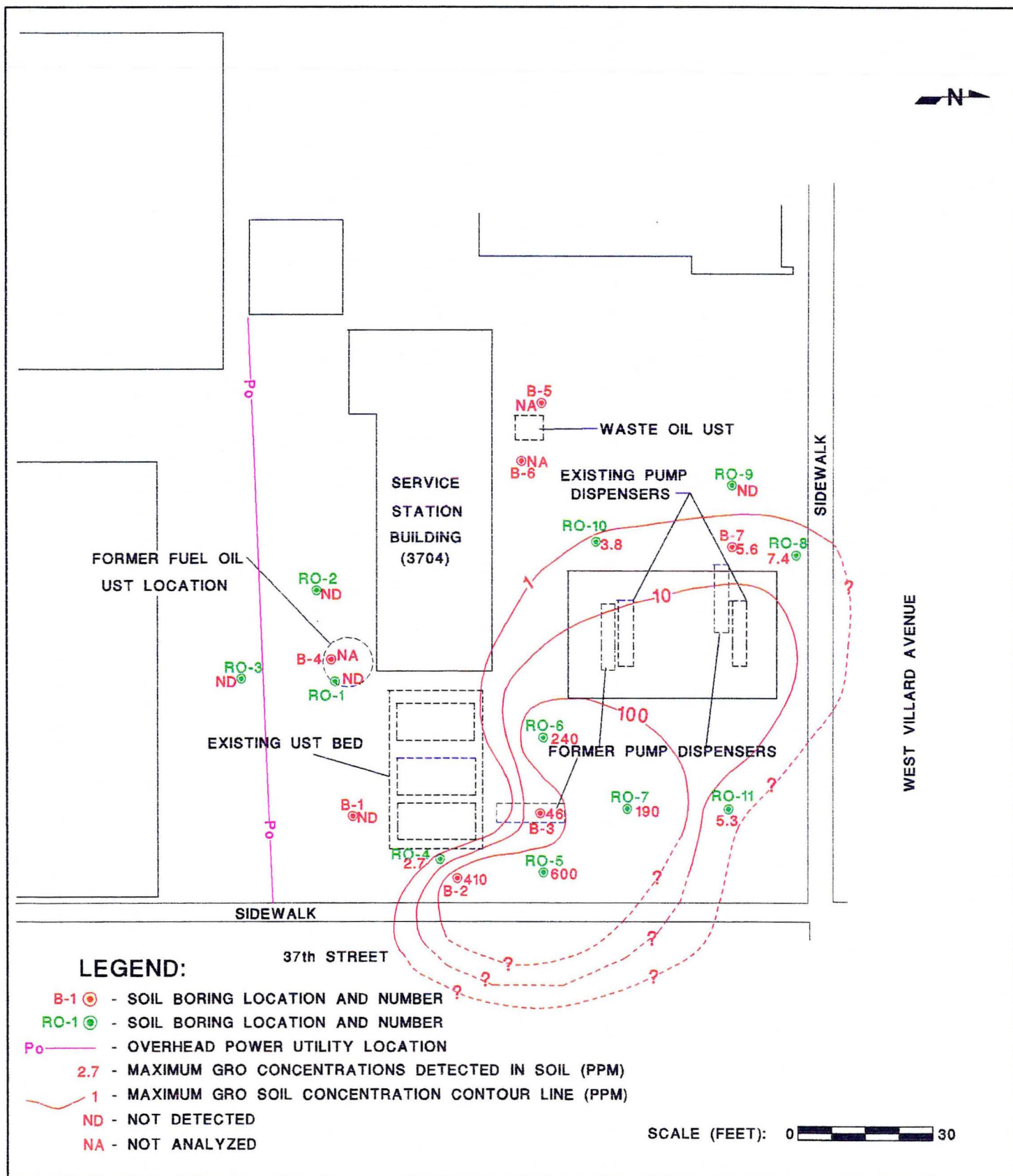


FIGURE 2-6 EXTENT OF GRO
CONTAMINATED SOIL (PPM)
37th AND VILLARD
MILWAUKEE, WISCONSIN

A D V E N T
ENVIRONMENTAL SERVICES, INC.
DATE: 6/7/93
DRAWING # 96804CE

Table 2-3
Roettgers Oil Site
Results of Chemical Analyses of Soil Samples
Dates Analyzed: 4/7/93-4/14/93

Sample Number	Date Collected	Depth Collected	PID (ppm)	GROs (ppm)	DROs (ppm)	Total Lead (ppm)	PVOCs(ppb)						
							Benzene	Ethyl-benzene	Methyl-t-butyl-ether	Toluene	1,2,4 Tri-methyl-benzene	1,3,5 Tri-methyl-benzene	Xylene
ROS-1A	3/29/93	31-33	<1	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
ROS-1B	3/29/93	49-51	<1	NA	ND	13	ND	10	ND	ND	ND	ND	ND
ROS-1C	3/29/93	9-11	<1	NA	ND	NA	ND	ND	ND	5.6	ND	18	ND
ROS-2A	3/29/93	15-17	<1	NA	ND	20	ND	6	ND	13	ND	ND	ND
ROS-2B	3/29/93	23-25	<1	NA	ND	NA	ND	7.8	ND	7.5	ND	ND	ND
ROS-3A	3/30/93	9-11	<2	NA	ND	20	ND	ND	ND	2.6	ND	ND	ND
ROS-3B	3/30/93	17-19	<2	NA	ND	NA	ND	ND	ND	3.4	ND	ND	ND
ROS-4A	3/30/93	17-19	<1	2.7	NA	20	ND	ND	ND	14	20	ND	ND
ROS-5A	3/30/93	5-7	542	190	NA	16	370	4,900	ND	ND	14,000	4,000	7,900
ROS-5A duplicate	3/30/93	5-7	542	600	NA	NA	NA	NA	NA	NA	NA	NA	NA
ROS-5B	3/30/93	19-21	<1	4.2	NA	NA	ND	17	ND	ND	ND	ND	ND
ROS-6A	3/30/93	5-7	300	240	NA	20	430	4,300	ND	490	12,000	3,400	15,000
ROS-6B	3/30/93	19-21	<1	2.5	NA	NA	ND	11	ND	7.1	ND	ND	ND
Fuel Oil (F.O.)	3/30/93	—	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-3 (continued)
Roettgers Oil Site
Results of Chemical Analyses of Soil Samples
Dates Analyzed: 4/7/93-4/14/93

Sample Number	Date Collected	Depth Collected	PID (ppm)	GROs (ppm)	DROs (ppm)	Total Lead (ppm)	PVOCs(ppb)						
							Benzene	Ethyl-benzene	Methyl-t-butyl-ether	Toluene	1,2,4 Tri-methyl-benzene	1,3,5 Tri-methyl-benzene	Xylene
ROS-7A	4/1/93	5-7	75	190	NA	24	200	620	ND	120	8,300	1,400	3,100
ROS-7B	4/1/93	19-21	<1	1.7	NA	NA	ND	28	ND	9.3	37	23	ND
ROS-8B-A	4/1/93	9-11	<1	7.4	NA	23	ND	11	ND	14	26	34	ND
ROS-8B-B	4/1/93	19-21	<1	2.2	NA	NA	ND	12	ND	6.5	25	15	ND
ROS-9A	4/1/93	9-11	<1	ND	NA	18	ND	ND	ND	9.6	ND	ND	ND
ROS-9B	4/1/93	19-21	<1	ND	NA	NA	ND	ND	ND	11	ND	ND	7.5
ROS-10A	4/2/93	9-11	<1	ND	NA	19	ND	ND	ND	8	ND	ND	ND
ROS-10B	4/2/93	19-21	<1	3.8	NA	NA	ND	15	ND	ND	16	ND	ND
ROS-11A	4/2/93	7-9	35	5.3	NA	26	190	1,400	ND	120	4,900	ND	1,600
ROS-11B	4/2/93	19-21	<1	ND	NA	NA	ND	18	ND	13	25	ND	ND
ROS-8B-B duplicate	4/1/93	19-21	<1	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stockpile	4/2/93	---	15	3.9	NA	NA	280	4,000	91	150	7,000	ND	6,900
Methanol Blank	3/30/93	---	---	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
LDL	---	---	---	1	1	1	1	1	1	1	1	1	1
RAL	---	---	---	10	10								

ND Not detected above laboratory detection
LDL Laboratory Detection Limits

NA Not Applicable or Not Analyzed
RAL Remedial Action Limits

Table 2-4
Roettgers Oil Site
Results of Chemical Analyses of Soil Samples for Disposal Parameters
Date Analyzed 4/6/93

Sample Number	ROS-5A	Fuel Oil	Detection Limit (ppm)
Date Collected	3/30/93	3/30/93	—
Depth Collected (feet)	5 - 7	from drummed soil	—
Analyte			
TCLP Lead (ppm)	0.0085	0.013	0.005
TCLP Benzene Method 8240 (ppm)	ND	ND	0.4
Flash Point (open cup, °F)	>200	>200	—
pH	9.6	9.8	—
paint filter	pass	pass	—
specific gravity	2	3	—
PCBs (ppb)			
PCB 1016	ND	ND	—
PCB 1221	ND	ND	—
PCB 1242	ND	ND	—
PCB 1248	ND	ND	—
PCB 1254	ND	ND	—
PCB 1260	ND	ND	—
LDL (ppb)	60	95	—

ND Not detected above laboratory detection limits
 LDL Laboratory Detection Limits

Groundwater Samples

Groundwater was not encountered in any borings completed on-site; therefore, no groundwater samples were collected for laboratory analyses.

2.7 Conclusion

This section discusses field observations and analytical data pertaining to observed or potential contamination that may be attributed to the Roettgers Oil site.

Site History and Reconnaissance Inspection

The site history review revealed that petroleum products have been stored and dispensed on-site since 1965. The fuel oil UST that was located at the southeast corner site since approximately 1988 was removed in 1984. The 1,000-gallon waste oil UST installed in approximately 1968 located north of the garage is currently not in use. Four leaded gasoline USTs located on the east side of the site were removed in 1989 and were replaced with three 10,000-gallon unleaded gasoline USTs. Three pump islands were removed and replaced with two pump islands in 1989. The three 10,000-gallon unleaded gasoline USTs are currently in use.

Advent completed a Phase I environmental assessment for the Roettgers Oil site on July 7, 1992. Laboratory analysis of soil samples collected from soil borings B-2 and B-3 located in the vicinity of gasoline UST bed detected GROs at concentrations of 46 and 410 ppm, respectively. Laboratory analyses of the soil sample collected from soil boring B-4 located adjacent to the fuel oil UST bed detected DROs at a concentration of 16 ppm. The GRO and DRO concentrations detected in soil borings B-2, B-3, and B-4 exceed the 10 ppm WDILHR remedial action guideline for petroleum-impacted soil. No other sources of potential environmental contamination were identified during the site history interview and reconnaissance inspection.

Soil

Field screening of soil samples with a calibrated PID indicated the presence of VOCs in excess of background levels at the site (Figure 2-7). Results of laboratory analyses detected the presence of GROs at levels exceeding the 10 ppm remedial action guideline for petroleum-impacted soils prescribed by WDILHR. PVOCs were detected in several soil samples above laboratory detection limits. There are presently no regulated levels for PVOCs in soil. Total lead and TCLP lead were detected in all soil samples analyzed but at concentrations below levels that are considered to have the potential to exceed regulated levels and within the range of naturally occurring concentrations.

The area of soil contamination generally corresponds to the location of the former and current dispenser islands, on the south and east side of the site. Results of field screening with a PID and laboratory analyses of collected soil samples suggest that the predominantly clayey soils at the Roettgers Oil site property have confined the extent of GRO contamination to within nine feet of the surface. Soil contamination appears to extend topographically downgradient to the east onto the 37th Street right-of-way (Figures 2-6 and 2-7). Negotiations with the city of Milwaukee to obtain permission to complete borings within the 37th Street right-of-way to determine the inferred downgradient extent of GRO contamination were unsuccessful. The data collected to date suggest that approximately 1,230 cubic yards (1,845 tons) of petroleum-impacted soil is present on the Roettgers Oil property. The extent of the impacted soil under 37th Street has not been defined.

Groundwater

Groundwater was not encountered in any of the soil borings that were completed to a maximum depth of 51 feet. Well logs obtained from the Wisconsin Geological and Natural History Survey (WGNHS) indicate that groundwater occurs at depths of 75 to 85 feet. Results of field screening and laboratory analysis of collected soil samples suggest that the significantly impacted soils are localized to within nine feet of the surface. The clay character of the soils (typically low permeability), the demonstrated depth to groundwater (greater than 51 feet), and the demonstrated vertical extent of impacted soils (approximately nine feet) suggest that it is unlikely that groundwater has been impacted by petroleum products from this site.

2.8 Recommendations

Advent recommends that the petroleum-impacted soils at the Roettgers Oil site be treated by the most cost-effective technology available. Based on field observations and analytical results of soil collected at the Roettgers Oil site, current technologies that may be appropriate include: active in-situ soil venting, excavation with thermal treatment, or excavation and landfilling at a WDNR-approved facility.

Based on similar sites, Advent believes that excavation and landfill disposal will likely be the most efficient strategy that can be developed and implemented to remediate the petroleum-impacted soil at the Roettgers Oil site. The data collected to date suggest that significantly impacted soil is limited to the clays and silty clays present from the surface to approximately nine feet below ground surface. The demonstrated vertical extent of impacted soil suggests that groundwater has not been impacted at the site.

If excavation and landfill disposal is the approved remediation option, an estimated 1,400 cubic yards (approximately 2,240 tons) of impacted soil will be removed and transported to a WDNR approved landfill for disposal. Impacted soil beneath 37th Street and Villard Avenue that cannot be removed by standard excavation methods is capped by pavement and does not pose a significant threat to human health and safety. The impermeable nature of the native clay soils at the site will likely impede further migration of contaminants since the source and the most heavily contaminated soil will have been removed. Impacted soil beneath 37th Street and Villard Avenue will be further isolated by installing an impermeable membrane along the east and north walls of the excavation prior to backfilling.

Active or passive bioremediation does not appear to be a likely candidate for successful remediation due to the predominance of clay material at the site.

Remediation of the soil by soil venting is likely not practical due to the impervious nature of the soils that will limit the vacuum radius of influence resulting in a remediation system design likely to require a level of effort that will make soil venting economically undesirable for this site.

At the client's request, Advent will prepare a detailed cost comparison of alternative remediation technologies as required by ILHR 47 to ensure selection of the most cost-effective remediation strategy and maintain the client's eligibility for reimbursement under the Petroleum Environmental Cleanup Fund Act (PECFA).

Section Three

APPENDICES

APPENDIX A
LETTER REPORT TO WDNR



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

George E., Secretary
Box 12436
Milwaukee, Wisconsin 53212
TELEFAX NO. 414-961-2770

March 2, 1993

File Ref: 4440-3040
County: Milwaukee
ER-LUST

Mr. Don Roettgers
5169 North 37th Street
Milwaukee, WI 53209

Dear Mr. Roettgers:

RE: Roettger's Oil Company - 5149 North 37th Street, Milwaukee, WI

Wisconsin Department of Natural Resources (WDNR) has been notified that petroleum contamination was discovered January 24, 1993 at the above referenced location. Based on the site specific information provided, this case has been assigned to the Medium Priority Rank group. The purpose of this letter is to inform you of your legal responsibilities to address this situation.

Releases from underground storage tanks regulated under Subtitle I of the Resource Conservation and Recovery Act require compliance with the provisions of 40 CFR Parts 280 and 281. The Environmental Protection Agency (EPA) has the authority to take enforcement action at any time, but will generally not take action against parties cooperating with the state. The WDNR proceeds in LUST cases under the authority of s. 144.76, Wisconsin Statutes, commonly referred to as Wisconsin's Hazardous Substance Spill Law. The definition of "hazardous substance" as found in s. 144.01(4m), Wisconsin Statutes, includes petroleum products.

Wisconsin Statute 144.76(2a) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall notify the Department immediately of any discharge not exempted under sub.(9)."

Wisconsin Statute 144.76(3) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of this state."

Because you possess or control a hazardous substance which has been released to the environment, the Department identifies you as the party responsible for taking the actions necessary to restore the environment. You are required to:

1. Immediately notify the WDNR Spills Hotline at (414) 263-8491 should emergency conditions involving explosive vapors and/or well contamination develop.
2. Conduct an investigation to determine the extent of soil and groundwater contamination.
3. Remediate all of the environmental impacts caused by this situation.
4. Sample private water supply wells which may have been impacted by the release.

The Department suggests that you have a qualified environmental engineer or hydrogeologist direct the remedial investigation, assess the environmental impact, and coordinate the implementation of a cleanup program. Within 15 days of receiving this letter, you should provide the WDNR with the date the remedial investigation will begin.

The Department requires that the location of the tank and/or release be submitted with the work plan. Requirements for location are Latitude, Longitude, 1/4, 1/4, Township, and Range (east or west).

Final documentation of the investigation and cleanup should be prepared according to the guidance enclosed and sent to this office on completion of compliance with all applicable federal, state and local laws and regulations. Remedial actions must adequately cleanup contaminated soil and/or groundwater to current WDNR guidelines and/or standards. All product, soil, wastewater, and sludge must be disposed of in compliance with all applicable federal, state and local laws and regulations. Because the Department is experiencing a backlog of leaking underground storage tank cases of emergency status and your case is not currently ranked as an emergency, your submittals will be reviewed as time permits. Investigation and cleanup should not, however, be delayed pending WDNR review of your case.

The WDNR requests that concise LUST project updates be submitted every six months for all medium priority sites; biannual updates will enable WDNR project managers to monitor the status of remedial investigations and/or corrective actions on projects which are not under direct WDNR oversight.

You are encouraged to contact the Department of Industry, Labor, and Human Relations (DILHR), the state agency that administers the Petroleum Environmental Cleanup Fund (PECFA). This fund may reimburse you for eligible costs associated with the remedial investigation and cleanup. DILHR should be contacted at (608) 267-4545 to obtain current information regarding the PECFA program.

Please be aware that your ability to utilize PECFA funds will be dependent on your cooperation in adequately addressing this problem.

Sincerely,


Giselle Red

Program Assistant, Environmental Repair Section

Enclosures: Remedial Investigation Checklist

c: Advent Environmental
SED Case File

ADVENT

ENVIRONMENTAL SERVICES, INC.

August 14, 1992

Mr. Scott Fleming
Weiss, Berzowski, Brady, and Donahue
700 North Water Street
Milwaukee, WI 53202-4273

Dear Mr. Fleming:

Subject: 37th and Villard Environmental Assessment

On July 7, 1992, Advent Environmental Services, Inc. (AESI) completed seven soil borings at depths ranging between 11 and 21 feet at the 37th and Villard site (see Figure 1). Soil samples were collected from the soil borings at locations selected by AESI personnel to determine the status of soils adjacent to three active gasoline underground storage tanks (USTs), one former 1,000-gallon fuel oil UST, one 500-gallon drain oil UST, three former pump islands, and two active pump islands (see Figure 2 for soil boring locations.) Soil sample collection and field screening procedures are included in Appendix A. Soil boring logs and soil descriptions are included in Appendix B. Copies of laboratory analytical data are included in Appendix C.

The field and laboratory results are summarized as follows:

- Boring B-1: B-1 was located approximately 8 feet south of the UST bed containing three active gasoline USTs. Boring B-1 was continuously sampled from the 5 to 21 foot depth interval. Field screening of soil samples with a photoionization detector (PID) did not reveal any readings above background levels (0 parts per million [ppm]). Laboratory analysis of soil sample BS-1 collected at the 19 to 21 foot depth interval did not reveal any GROs above the 5.0 mg/kg (ppm) laboratory detection limit.
- Boring B-2: B-2 was located approximately 6 feet east of the UST bed containing three active gasoline USTs. Boring B-2 was continuously sampled from the 5 to 21 foot depth interval. Field screening of soil samples with a PID revealed readings of 120, 25, and <1 ppm in the 5 to 7, 7 to 9, and 9 to 11 foot depth intervals, respectively. Laboratory analysis of soil sample BS-2 collected from the 5 to 7 foot depth interval revealed GROs at a concentration of 410 mg/kg (ppm).

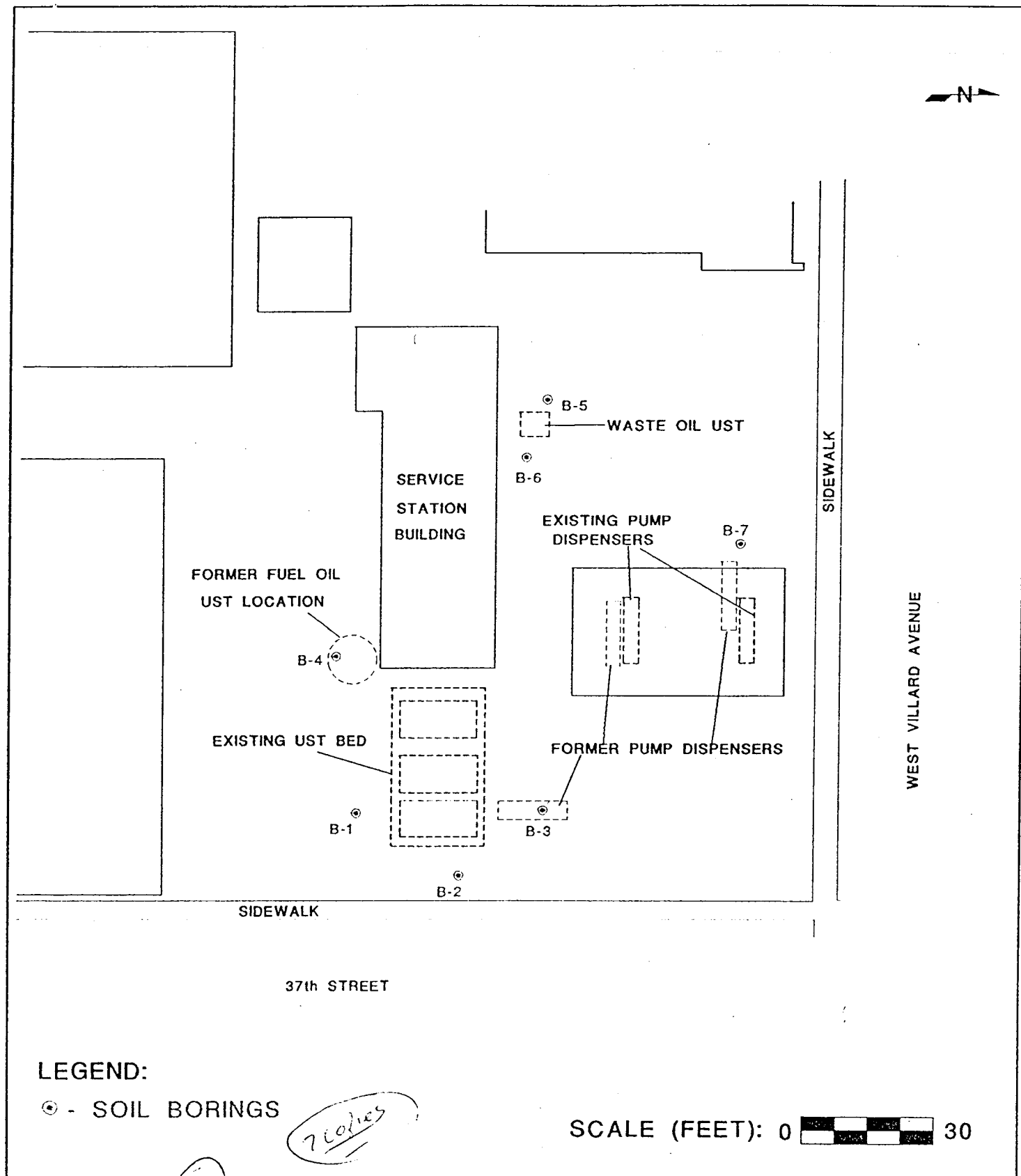


FIGURE 1 - SITE FEATURES
37th AND VILLARD
MILWAUKEE, WISCONSIN

A D V E N T
 ENVIRONMENTAL SERVICES, INC.
 DATE: 8/10/92
 DRAWING # 96804CA

- Boring B-3: B-3 was located approximately 12 feet north of the UST bed containing the three gasoline USTs and directly on the location of a former pump island. Boring B-3 was continuously sampled from the 3 to 21 foot depth interval. Field screening of soil samples with a PID revealed readings of 125, 40, and 2 ppm in the 3 to 5, 5 to 7, and 7 to 9 foot depth intervals, respectively. Laboratory analysis of soil sample BS-3 collected from the 3 to 5 foot depth interval revealed GROs at a concentration of 46 mg/kg (ppm).
- Boring B-4: B-4 was located approximately 10 feet south of the southeast corner of the service station building near the location of the former fuel oil UST. Boring B-4 was continuously sampled from the 3 to 17 foot depth interval. Field screening of soil samples with a PID did not reveal any readings above background levels (0 ppm). Laboratory analysis of soil sample BS-4 collected in the 15 to 17 foot depth interval revealed a DRO concentration of 16 mg/kg (ppm).
- Boring B-5: Boring B-5 was located on the west side of the site and west of the existing waste oil UST. Boring B-5 was continuously sampled from the 3 to 15 foot depth interval. Field screening of soil samples with a PID did not reveal any readings above background levels (0 ppm). Laboratory analysis of soil sample BS-5 collected at the 11 to 13 foot depth interval did not reveal any total recoverable petroleum hydrocarbons (TRPHs) above the 5.0 laboratory detection limit.
- Boring B-6: B-6 was located on the west side of the site, east of the existing waste oil UST. Boring B-6 was continuously sampled from the 3 to 15 foot depth interval. Field screening of soil samples with a PID did not reveal readings above background levels (0 ppm). Laboratory analysis of soil sample BS-6 collected at the 9 to 11 foot depth interval did not reveal any TRPHs above the 5.0 laboratory detection limit.
- Boring B-7: B-7 was located west of the existing pump islands. Boring B-7 was continuously sampled from the 1 to 11 foot depth interval. Field screening with a PID did not reveal any readings above background levels (0 ppm). Laboratory analysis of soil sample BS-7 collected at the 9 to 11 foot depth interval revealed GROs at a concentration of 5.6 mg/kg (ppm).

Table 1 shows the results of laboratory analyses and field screening for each soil sample.

Table 1					
Results of Laboratory Analyses and Field Screening					
Sample	Depth (feet)	PID Reading (ppm)	GROs (mg/kg)	DROs (mg/kg)	TRPHs (ppm)
BS-1	19 - 21	0	ND	NA	NA
BS-2	5 - 7	120	410	NA	NA
BS-3	3 - 5	125	46	NA	NA
BS-4	15 - 17	0	NA	16	NA
BS-5	11 - 13	0	NA	NA	ND
BS-6	9 - 11	0	NA	NA	ND
BS-7	9 - 11	0	5.6	NA	NA
Laboratory Detection Limits	---	---	5.0	5.0	5.0

ND Not detected above laboratory detection limits
NA Not analyzed

DISCUSSION

Based upon the results of laboratory analyses and field screening, petroleum-contaminated soil was identified in soil borings B-2 and B-3 near the three active gasoline USTs. The contamination was detected in the 5 to 11 foot depth interval and may also exist in the interval from 5 feet to the ground surface that was not field screened.

Petroleum contamination was also identified by laboratory analysis in boring B-4 near the former fuel oil UST location; no PID readings were observed in this boring. No indication of waste oil contamination was found near the waste oil UST in the areas investigated. No PID readings or TRPHs were detected in borings B-5 or B-6. Petroleum contamination was also identified by laboratory analysis in boring B-7 near a former and active pump dispenser; no PID readings were indicated in this boring.

RECOMMENDATIONS

AESI recommends that the owner of the site be informed of the petroleum contamination identified in order to comply with Wisconsin Statutes 144.76(2a) and 144.76(3).

Wisconsin Statute 144.76(2a) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall notify the Department immediately of any discharge not exempted under sub. (9)."

Wisconsin Statute 144.76(3) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of this state."

AESI also recommends that additional soil borings and soil sampling be completed at the site according to Wisconsin Department of Natural Resources (WDNR) Leaking Underground Storage Tank (LUST) guidance to define the horizontal and vertical extent of contaminants identified.

If you have any questions or concerns, please do not hesitate to call at 238-1998.

Sincerely,

ADVENT ENVIRONMENTAL SERVICES, INC.



Randall S. Igel
Environmental Specialist

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Facility/Project Name <u>37th + Vilford</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-1</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
				Drilling Method <u>Hollow Stem Auger</u>	
DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level _____ Feet MSL	Surface Elevation _____ Feet MSL	Borehole Diameter <u>6.25</u> inches
Boring Location State Plane _____ N. _____ E S/C/N Lat _____ _____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W Long _____			Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W		
County _____		DNR County Code _____	Civil Town/City/ or Village _____		

Sample			Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number	Length Recovered (in)	Blow Counts							Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
			2												
			4												
	24	4.5 3.11	6	Firm Brown Clay with few mottles	CL			0							No od
	24	7.0 12.14	8	Firm Brown Clay with few mottles	CL			0							
	24	6.7 10.10	10	Firm Brown Clay no mottles	CL			0							
	24	5.7 9.12	12	Firm Gray/Brown Clay	CL			0							
	24	4.6 8.12	14	Firm Gray/Brown Clay	CL			0							
	24	4.5 8.9	16	Firm Gray / Brown Clay	CL			0							
	24	5.5 8.16	18	Gray / Brown Clay	CL			0							
	24	4.5 9.11	20	Gray / Brown Clay firm with wet seams	CL			0							
			22	EOB 210'											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Ken Sill & Son Firm Ken Sill & Son

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeiture not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$100 or more than \$1000 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name <u>327th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-2</u>	
Boring Drilled By (Firm name and name of crew chief) <u>WISCONSIN SOIL TESTING</u>		Date Drilling Started <u>07/02/92</u> M M D D Y Y		Date Drilling Completed <u>07/02/92</u> M M D D Y Y	
DNR Facility Well No. _____ WI Unique Well No. _____		Common Well Name _____		Drilling Method <u>Hollow-Stem Auger</u>	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) _____ Feet <input type="checkbox"/> N _____ Feet <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
County <u>MILWAUKEE</u>		DNR County Code _____		Civil Town/City/ or Village _____	

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
			4											
24	4.5 7.9		6	CL Firm Brown clay w/ mottles	CL			120						moderate Petroleum odor
24	6.7 11.13		8	Firm Brown clay	CL			25						Slight Pet. odor
24	4.8 10.11		10	Firm Brown clay with gravel	CL			<1						
24	5.7 9.8		12	Firm Brown clay with gravel	CL			0						
24	5.7 7.9		14	Firm Brown clay with gravel	CL			0						
24	4.6 8.9		16	Firm Brown clay	CL			0						
24	3.5 7.7		18	Firm Brown clay	CL			0						
24	4.5 6.8		20	Firm Brown clay with Gravel	CL			0						
			22											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm [Signature]

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-3</u>	
Boring Drilled By (Firm name and name of crew chief) <u>WISCONSIN SOIL TESTING</u>		Date Drilling Started <u>07102192</u> M M D D Y Y		Date Drilling Completed <u>07102192</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6-25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W _____				Long _____	
County <u>MILWAUKEE</u>		DNR County Code _____		Civil Town/City/ or Village _____	

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number	Length Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
			2												
BS-3	24	4.4 7.10	4	Brown firm clay with mottling	CL			125							Slight Pet odor
	24	5.6 9.10	6	Brown firm clay with gravel & mottling	CL			40							Slight Pet. odor
	24	6.9 12.15	8	Brown firm clay with gravel	CL			2							No pet odor
	24	5.9 11.14	10	Firm Brown clay with gravel	CL			0							No pet odor
	24	5.7 10.13	12	Firm Brown clay with gravel	CL			0							↓
	24	4.7 8.11	14	Firm Brown clay with gravel	CL			0							
	24	4.8 8.12	16	Firm Brown clay with gravel	CL			0							
	24	4.7 8.10	18	Firm Brown clay with gravel	CL			0							
	24	4.5 6.8	20	Brown clay with gravel	CL			0							
			22												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature James J. J. J. Firm Advent Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-4</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W _____		County <u>MILWAUKEE</u>		DNR County Code <u>4-1</u> Civil Town/City/ or Village <u>MILWAUKEE</u>	

Sample			Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number	Length Recovered (in)	Blow Counts							Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
			2												
	24	34 59	4	Gray / Brown firm clay with mottling and gravel	CL			0							No Petroleum odor
	24	46 811	6	Red / Brown Firm clay with gravel				0							
	24	57 1115	8					0							
	24	68 1013	10					0							
	24	58 1010	12					0							
	24	24 67	14					0							
4	24	54 56	16					0							
			18	EOB 17'											
			20												
			22												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm Field & Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Route To:
☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other

Page 1 of 1

Facility/Project Name 37th + Villard License/Permit/Monitoring Number _____ Boring Number B-5

Boring Drilled By (Firm name and name of crew chief) Wisconsin Soil Testing Date Drilling Started 07/07/92 Date Drilling Completed 07/07/92 Drilling Method Hollow Stem Auger
M M D D Y Y M M D D Y Y

DNR Facility Well No. _____ WI Unique Well No. _____ Common Well Name _____ Final Static Water Level _____ Feet MSL Surface Elevation _____ Feet MSL Borehole Diameter 6.25 inches

Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____ Local Grid Location (If applicable) _____ Feet ☐ N ☐ E ☐ S ☐ W
1/4 of _____ 1/4 of Section _____, T _____ N. R. _____ E/W _____ Long _____

County MILWAUKEE DNR County Code 41 Civil Town/City/ or Village MILWAUKEE

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
24	46	1913	4	Firm Red/Brown clay with mottles				0						No Petroleum odor
24	57	99	6	Red/Brown clay interspersed with FG well-sorted sand				0						
24	57	79	8	Firm grey clay with Red/Brown FG sand layer	CL			0						
24	78	810	10	F. Gray clay with CG sand layer				0						
24	47	89	12	Firm grey clay				0						
24	57	1014	14	Firm grey clay with gravel				0						
			16	EOB 15'										
			18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature]

Firm Advent Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

- ☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number		Boring Number <u>B-6</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07102192</u> M M D D Y Y		Date Drilling Completed <u>07102192</u> M M D D Y Y	
DNR Facility Well No.		WI Unique Well No.		Common Well Name	
				Final Static Water Level Feet MSL	
				Surface Elevation Feet MSL	
				Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane		N. E S/C/N		Lat	
1/4 of 1/4 of Section		T N, R		E/W Long	
County <u>Milwaukee</u>		DNR County Code <u>41</u>		Civil Town/City/ or Village <u>Milwaukee</u>	

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
24	56 911		4	Firm brown clay with nodules 1.5" Red/Brown F.G. sand layer				0						No petroleum odor
24	95 79		6	Red/Brown F.G. sand with Red Brown clay				0						
24	57 911		8	Poorly sorted sand + gravel	CL			0						
-6 24	56 911		10	Firm grey clay with Red/ Brown F.G. sand layers				0						
24	45 69		12	Firm grey clay with gravel				0						
24	57 710		14					0						
			16	GOB 15"										
			18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Richard L. Sabel Firm Advanced Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Route To:
☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other _____

Page 1 of 1

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>13-7</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____ T _____ N. R _____ E/W _____ Long _____		DNR County Code <u>41</u>		Civil Town/City/ or Village <u>Milwaukee</u>	
County <u>Milwaukee</u>					

MILWAUKEE														
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number	Length Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
24	45	69	2	Brown firm clay with mottles 2" F.G. sand layer at 2"	CL			0						No petroleum odor
	4		0											
	45	6	Red/Brown clay with F.G. sand	0										
	710			0										
	45	8	Grey/Brown firm clay with gravel	0										
57	0													
-7	2	45	10				0							
		77												
			12	QOS 11"										
			14											
			16											
			18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm [Signature]

Form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

APPENDIX B
SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers Oil (96804)

PAGE 1 OF 4

DATE: 4/1/93

TIME: 10:30 am

DIRECTION OF
PHOTOGRAPH:

southwest

WEATHER CONDITIONS:

partly cloudy

29°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Roettgers Oil site, 3709 W. Villard Ave.

DATE: 4/1/93

TIME: 10:30 am

DIRECTION OF
PHOTOGRAPH:

southeast

WEATHER CONDITIONS:

partly cloudy

29°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Roettgers Oil site, 3709 W. Villard Ave.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers Oil (96804)

PAGE 2 OF 4

DATE: 4/1/93

TIME: 10:45 am

DIRECTION OF
PHOTOGRAPH:

northwest

WEATHER CONDITIONS:

partly cloudy

29°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Roettgers Oil site. Orange cones indicate locations of soil borings B-4, RO-1, RO-2, and RO-3. Drummed contaminated soil cuttings are located against south wall of building.

DATE: 4/1/93

TIME: 10:45 am

DIRECTION OF
PHOTOGRAPH:

southwest

WEATHER CONDITIONS:

partly cloudy

29°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Orange cones indicate locations of soil borings B-4, RO-1, RO-2, and RO-3.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers Oil (96804)

PAGE 3 OF 4

DATE: 4/1/93

TIME: 11:00 am

DIRECTION OF
PHOTOGRAPH:

southwest

WEATHER CONDITIONS:

partly cloudy

29°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Orange cone indicates location of soil boring RO-6 just north of gasoline UST bed.

DATE: 4/1/93

TIME: 11:00 am

DIRECTION OF
PHOTOGRAPH:

north

WEATHER CONDITIONS:

partly cloudy

34°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Orange cones indicate locations of soil borings RO-4, RO-5, RO-7, and RO-11.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Roettgers Oil (96804)

PAGE 4 OF 4

DATE: 4/1/93

TIME: 11:15 am

DIRECTION OF
PHOTOGRAPH:

southeast

WEATHER CONDITIONS:

partly cloudy

34°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Orange cone indicate locations of soil borings B-7, RO-8, RO-9, and RO-10.

DATE: 4/1/93

TIME: 11:15 am

DIRECTION OF
PHOTOGRAPH:

southeast

WEATHER CONDITIONS:

partly cloudy

34°F

PHOTOGRAPHED BY:

Stephen G. Reuter



DESCRIPTION: Orange cones indicate locations of soil borings RO-5, RO-8, RO-9, RO-10, and B-7.

APPENDIX C

WISCONSIN GEOLOGIC AND NATURAL HISTORY SURVEY GEOLOGIC WELLS AND WELL CONSTRUCTOR'S REPORTS

SEP 13 1945

7. DRILLHOLE OR EXCAVATION:

8. CASING AND LINER PIPE OR CURBING:

9. GROUT:

11. MISCELLANEOUS DATA:

Signature

10. FORMATIONS:

Complete Mail Address

WELL LOG and REPORT

In this column indicate the kind of casing, liner, shoe and other accessories used.

WELL DIAGRAM.
Use a red line to show casing or liner pipe. Use black for drill or borehole.

In this column state the kind of formations penetrated, their thickness in feet and if water bearing.

Record of
FINAL
Pumping test

*Special Well
Drillers Pipe*

*1 rod forged
steel drive
shoe*

1 - Drillhole

*2 - Mud
grout*

1 - Casing

Inches Diameter		Depth
2 3 4 5 6 8 10 12 14 16 18		
		4'
		25
		28
		32'
		44'
		50
		70
		75
		93'
		93'
		100
		150
		200
		400
		800
		1200

Draw the diagram to show the right half only

Blue Clay 4'
Stoney Clay 21'
Sand & Stoney 3'
Blue Clay 4'
Stoney Clay 12'
Stoney Clay 7'
Blue Clay 19'
13' Hard pan
Limerock 10'
Water bearing

Duration of test
Hours *3*

Pumping rate
G.P.M. *15*

Depth of pump in
well. Ft. *35*

Standing water-level
(from surface)
Ft. *3'*

Water-level when
pumping Ft. *13*

Water. End of test.
Clear ☒
Cloudy ☐
Turbid ☐

Was the well sterilized?
Yes ☒ No ☐

To which laboratory was
sample sent?
Kenosha
Date *Aug 18*

Was the well sealed on
completion?
Yes ☒ No ☐

How high did you leave the
casing-pipe above grade?
8" well pit

Well was completed
Date *Aug 18*
1939

Well Driller
Adrian Ucker
Signature

WELL CONSTRUCTION REPORT
WISCONSIN STATE BOARD OF HEALTH
WELL CONSTRUCTION DIVISION

NOV - 5 1941

Note: Section 31 of the Wisconsin Well Construction Code, having the force and effect of law, provides that within thirty days after completion of every well the driller shall submit a report covering all essential details of construction to the State Board of Health on a form provided by the Board.

Owner Thomas Plaff Driller F. W. Giehl & Sons
Street or RFD 5050 No 47th Street Post Office Cedarburg, Wis.
Post Office Milwaukee, Wis. Date Nov 18 1941 Permit No. 173

LOCATION OF PREMISES

Milwaukee County Granville Town
5050 No 47th St.
Describe further by subdivision, plat, district, lake, lot.

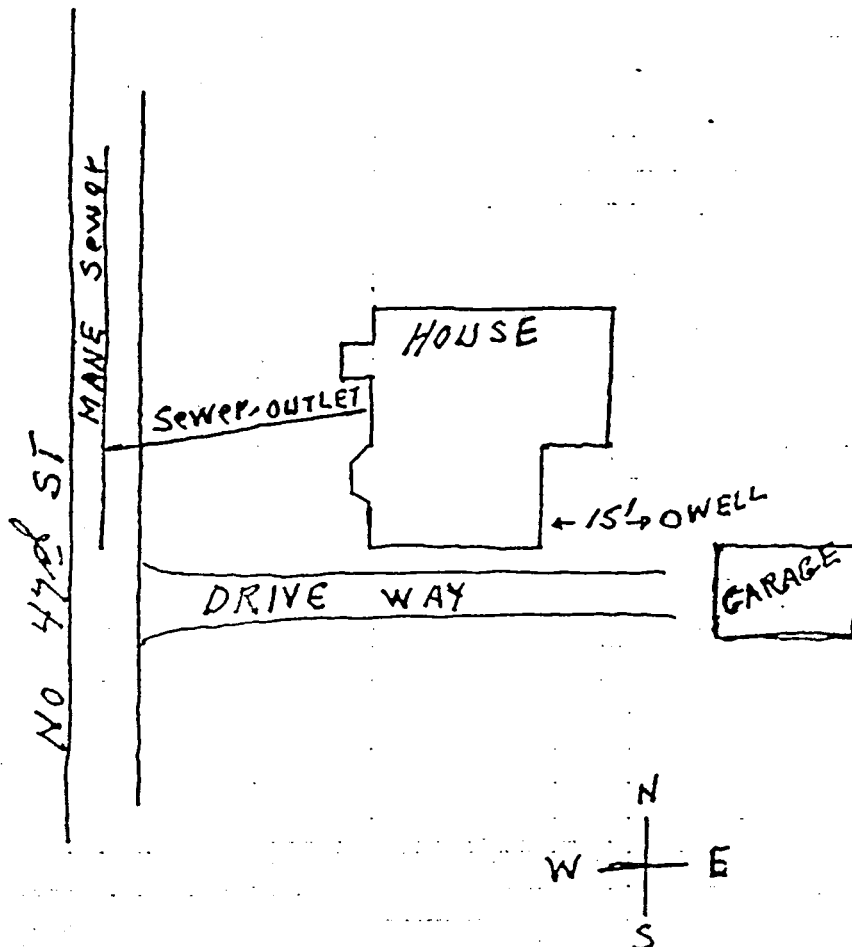
block, nearest principal highway, etc., whichever apply.

The square below represents a section of land divided into 40 acre tracts. Mark the position of the premises in the section.

SWNESE	
Sec. No. <u>35</u>	
Twp. No. <u>8</u>	
Range <u>21</u> { <u>E</u> / <u>W</u>	

DIAGRAM OF PREMISES

See Well Construction Report bulletin. In making the diagram in the space below consider 10 ft. as the distance between lines. Be sure to indicate NORTH.



County Will Twp. Will Sec. SENE Sec 35
(Office Record—Do not fill in)

T.8N. R.21E.

TO THE WISCONSIN STATE BOARD OF HEALTH,
WELL DRILLING DIVISION, MADISON, WIS.

WELL LOG PREMISES DIAGRAM, and REPORT

For Official Record of the Board

(TO BE USED FOR THAT PURPOSE ONLY)

Owner Peter Dapp Driller Bleaswater Pump & H. D. Co.
(If a joint ownership give name of responsible official. Also name of each individual holding an interest. Use a separate sheet and attach hereto.)
Address 9301 N. Greenfield Av.
West Allis Wis.
Address Ata. F. Co. 1-
(City, village, township, county)
Date of Report 11-10 1937
Registration No. 37

Give below the location of the property on which well is drilled.

If incorporated village or city: N 47th - Rohr. Av.

If unincorporated hamlet

If Lake Shore Plat

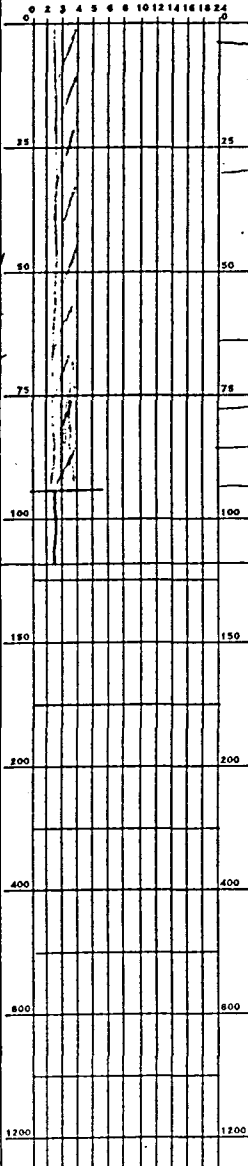
If Farm

If School

If other public building

Miscellaneous

WELL LOG and REPORT

Kind of casing and liner in feet. Kind of shoe. Indicate grout, screen, seal, etc.	WELL DIAGRAM Vertical Lines = in. Dia. Horizontal Lines = ft. Depth	Give depth of formations in feet. State if dry or water bearing.	Record of FINAL Pumping Test
5" Well Driller Special Steel Pipe 5" Steel Forged Shoe No liner used Annular space filled with feed- bley clay and drilled cuttings		0-1- Black loam 1-31- Red Sandy clay 31- Gray clay 50-61 Gray sandy 61-80 Gray clay 80-80'-2" Gray sandy 80'-2"-80'-10" gravel & sand 80-100 solid limestone 103 ft. Casing in Rock 3" Flawing well	Duration of test. Hours <u>4</u> Pumping Rate. G. P. M. <u>7 1/2</u> Depth of pump in well. Ft. <u>81 ft. 8"</u> Standing water-level (from surface.) Ft. <u>25</u> Water level when pumping Ft. <u>25</u> Water. End of test. Check: Clear <input checked="" type="checkbox"/> Cloudy <input type="checkbox"/> Turbid <input type="checkbox"/> Was well sterilized before test? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Date <u>11-</u> To which Laboratory was sample sent? <u>Keweenaw</u> Date _____ Was the well sealed on completion? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> How high did you leave casing above grade? <u>6"</u> Well was completed <u>11-5</u> 19 <u>37</u> Well Driller: <u>Glenn Bailey</u> Signature. (Be sure to complete the report on the reverse side)

WELL CONSTRUCTION REPORT
WISCONSIN STATE BOARD OF HEALTH
WELL CONSTRUCTION DIVISION

MAR 7 1944

Note: Section 31 of the Wisconsin Well Construction Code, having the force and effect of law, provides that within thirty days after completion of every well the driller shall submit a report covering all essential details of construction to the State Board of Health on a form provided by the Board.

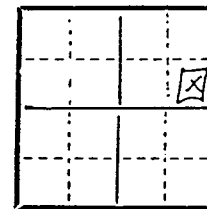
Owner Edward Kunkel Driller Earl Acker
Street or RFD Sherman Blvd. and Post Office Chen Grove
Post Office Villard Ave Milwaukee Date Feb 27, 1944 Permit No. 463

LOCATION OF PREMISES

Milwaukee
County

Granville
Town

The square below represents a section of land divided into 40 acre tracts. Mark the position of the premises in the section.



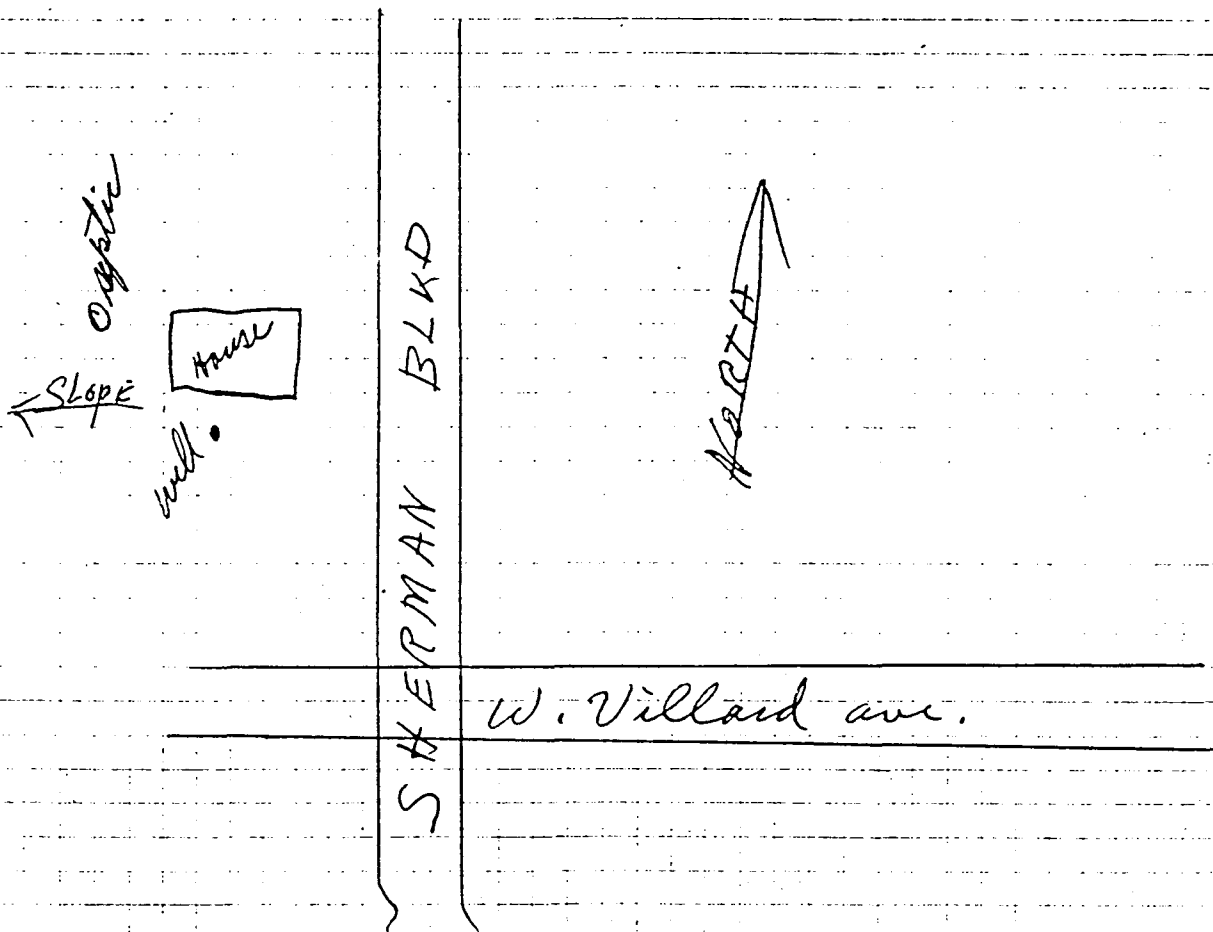
SE NE,
Sec. No. 35
Twp. North 8
Range 21 E

Describe further by subdivision, plat, district, lake, lot.

block, nearest principal highway, etc., whichever apply.

DIAGRAM OF PREMISES

See Well Construction Report bulletin. In making the diagram in the space below consider 10 ft. as the distance between lines. Be sure to indicate NORTH.



FEB 6 1947

6. Well is intended to supply water for: H. House

Dia. (in.)	From (ft.)	To (ft.)
10	0	20

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	Steel	0	93

Kind	From (ft.)	To (ft.)
Quartzite Clay	0	20

Kruska on Nov. 22 1946

[illegible]

5214 W. Vallard ave
Complete Mail Address

ОCT 14 1946

ОCT 14 1946

Town
Village of Granville
City

NWSENESE 35 T 8 N R 21 E

3. Owner or Agent Herman Schroeder

4. Address 3561-N- 17 Street Milwaukee

5. From well to nearest: Building 15 ft; sewer 65 ft; drain 15 ft; septic tank none ft;
dry well or filter bed none ft; abandoned well none ft.

6. Well is intended to supply water for: Private house use

7. DRILLHOLE OR EXCAVATION:

7. DIAMETER OF EXCAVATION.		
Dia. (in.)	From (ft.)	To (ft.)
10	0	30
6	30	140

8. CASING AND LINER PIPE OR CURBING:

Dis. (in.)	Kind	From (ft.)	To (ft.)
6	S. S.W. Steel Pipe	0	90

9. GROUT:

Kind	From (ft.)	To (ft.)
Puddled clay	0	30

10. FORMATIONS:

[illegible]

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 12 GPM.

Depth from surface to water: 25 ft.

Water-level when pumping: -----50----- ft.

Water sample sent to laboratory at
Kenosha on August 19, 1946.

Signature Emil H. Goecks
Registered Well Driller

Construction of the well was completed on _____
August 17, _____ 19 46

The well is terminated 6 inches
(above) (below) the permanent grade.

Was the well disinfected upon completion?
Yes x No

Was the well sealed watertight upon completion?
Yes x No

6993-N- Green Bay Avenue
Complete Mail Address
Milwaukee (9) Wisconsin

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

MAY 22 1947

1. County Milwaukee { Town Granville
Village
City
2. Location 5335 W. 47th St. NWSE NES 35T 8N R21E
3. Owner or Agent Mike Sierakowski
4. Address 5335 W. 47th St.
5. From well to nearest: Building 15 ft; sewer 25 ft; drain 35 ft; septic tank _____ ft;
dry well or filter bed _____ ft; abandoned well _____ ft.
6. Well is intended to supply water for: Private home

7. DRILLHOLE OR EXCAVATION:

Dia. (in.)	From (ft.)	To (ft.)
<u>10</u>	<u>0</u>	<u>20</u>

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
<u>6</u>	<u>Steel</u>	<u>0</u>	<u>85</u>

9. GROUT:

Kind	From (ft.)	To (ft.)
<u>Grouted clay</u>	<u>0</u>	<u>20</u>

10. FORMATIONS:

Kind	Thick-ness (ft.)	Total Depth (ft.)
<u>Top Soil</u>	<u>5</u>	<u>5</u>
<u>Yellow clay</u>	<u>15</u>	<u>20</u>
<u>Blue clay</u>	<u>55</u>	<u>75</u>
<u>Hard pan</u>	<u>10</u>	<u>85</u>
<u>Limestone</u>	<u>12</u>	<u>97</u>

11. MISCELLANEOUS DATA:

Yield test: 2 Hrs. at 12 GPM.Depth from surface to water: 15 ft.Water-level when pumping: 25 ft.

Water sample sent to laboratory at

Madison May 13 1947

Signature

A. W. Becker
Registered Well Driller

Construction of the well was completed on

May 12 1947The well is terminated _____ inches
(above) (below) the permanent grade.

Was the well disinfected upon completion?

Yes ✓ No _____

Was the well sealed watertight upon completion?

Yes ✓ No _____5214 W. Villard Ave.
Complete Mail Address

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County MILWAUKEE { Town ☒ GRANVILLE
 Village ☐
 City ☐ Check one and give name
2. Location 43RD & CUSTER [NW Sec 36 NE Sec 35 T8N R21E]
 Name of street and number of premise or Section, Town and Range numbers
3. Owner ☒ or Agent ☐ GREGOR PICHLER
 Name of individual, partnership or firm
4. Mail Address NONE AS YET
 Complete address required
5. From well to nearest: Building 15 ft; sewer — ft; drain — ft; septic tank 25 ft; —
 dry well or filter bed — ft; abandoned well — ft.

RECEIVED
 JUN 18 1951
 BUREAU
 SAN. ENG.

6. Well is intended to supply water for: RESIDENTS

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	0	35	6	35	193

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	STEEL PIPE	0	176

9. GROUT:

Kind	From (ft.)	To (ft.)
PUDDLED CLAY	0	35

11. MISCELLANEOUS DATA:

Yield test: 8 Hrs. at 10 GPM.Depth from surface to water-level: 60 ft.Water-level when pumping: 25 ft.

Water sample was sent to the state laboratory at:

KENOSHA on JUNE 11 1951
 City

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
CLAY	0	151
HARD PAN	151	170
SAND	170	176
LIME STONE	176	193

Construction of the well was completed on:

JUNE 9 1951The well is terminated 6 inches
☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion?

Yes X No —

Was the well sealed watertight upon completion?

Yes X No —Signature Richard Masler
 Registered Well Driller4654 NO. 29 STREET MILWAUKEE
 Complete Mail Address

Please do not write in space below

Rec'd 6-13-51 No. 2010Ans'd 6-15-51Interpretation Safe

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.	0	0	0	0	0
48 hrs.	0	0	0	0	0
Confirm	—	—	—	—	—

B. Coli —Examiner LE

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Milwaukee { Town ☒ Granville
Village ☐
City ☐ Check one and give name

2. Location 4221 W. Fairmount Ave. N15WSWS-3-17N-20E-5-1E
Name of street and number of premise or Section, Town and Range number

3. Owner ☒ or Agent ☐ Wayne Krueger
Name of individual, partnership or firm

4. Mail Address 4221 W. Fairmount Ave.
Complete address required

5. From well to nearest: Building 15 ft; sewer 28 ft; drain 15 ft; septic tank XX ft;
dry well or filter bed XX ft; abandoned well XX ft.

6. Well is intended to supply water for: Home

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
9	0	20			
6	0	129			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Blk. WD 19.45	0	99

9. GROUT:

Kind	From (ft.)	To (ft.)
CMay drill mud	0	20

11. MISCELLANEOUS DATA:

Yield test: 5 Hrs. at 10 GPM.

Depth from surface to water-level: 43 ft.

Water-level when pumping: 45 ft.

Water sample was sent to the state laboratory at:

Kenosha on 9/14 1953
City

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Clay	0	60
gravel	30	90
schell limestone	9	99
limestone WB	30	129

Construction of the well was completed on:

Sept. 14 1953

The well is terminated 8 inches
☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion?

Yes X No

Was the well sealed watertight upon completion?

Yes X No

Signature Garber & Son B. J. Garber 5807 W. Hampton Rd. Milwaukee 16
Registered Well Driller Complete Mail Address

Please do not write in space below

Rec'd _____ No. _____

Ans'd _____

Interpretation _____

10 ml 10 ml 10 ml 10 ml 10 ml

Gas—24 hrs. _____

48 hrs. _____

Confirm _____

B. Coli _____

Examiner _____

See Instructions on Reverse Side

RECEIVED
FBI
JAN 10 1940

6. Well is intended to supply water for:

T. BRECKHOLE.		
Dia. (In.)	From (ft.)	To (ft.)
10	0	20

Dis. (In.)	Kind	From (ft.)	To (ft.)
6	Steel	0	97

Kind	From (ft.)	To (ft.)
Buddled clay	0	20

[illegible]

Yield test: 2 Hrs. at 15 GPM.
Depth from surface to water: 30 ft.
Water-level when pumping: 45 ft.

Madison on Nov. 27 1947

Registered Well Driller

Nov. 28 1949

Was the well disinfected upon completion?

Yes ☒ No ☐

Was the well sealed watertight upon completion?

Yes ☒ No ☐

5214 W. Wilbur Ave.

Complete Mail Address

mil. 9 Wis.

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

1. County Miller Town Granville
 2. Location 5341 - Mo. 42 in. NWSW, NW, Sec 36 T8N R21E
 3. Owner or Agent Lanton & Lanton
 4. Address Miller
 5. Sewer metropolitan ft; drain metropolitan ft; septic tank metropolitan ft; disposal unit metropolitan ft; barnyard metropolitan ft; abandoned well metropolitan ft; other metropolitan ft. Explain on obverse side.

DRILLHOLE OR EXCAVATION			CASING PIPE, LINER PIPE OR CURBING			
Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	Kind	From (ft.)	To (ft.)
10	0	40	6	Steel Pipe	0	85
6	40	112				

FORMATIONS			GROUT		
Kind	From (ft.)	To (ft.)	Kind	From (ft.)	To (ft.)
Red Clay	0	20	Mud	0	40
Blue "	20	60			
Hard Pan	60	85			
Limestone	85	112			

Yield test: 5 Hrs. at 10 GPM.
 To static water-level 40 ft.
 Drawdown - - - - - 45 ft.
 Water sample was sent to the State Laboratory at Kenosha
 Construction of the well was completed on 9/4/41 1941
 The well is terminated 6 inches (above)(below) the permanent grade.
 Was the well disinfected upon completion? - - - Yes ☒ No ☐
 Was the well sealed watertight upon completion? - - Yes ☒ No ☐
 This report was prepared by or under the supervision of: L. M. May
 Registered Well Driller
 Permit No. 159 Date 9/4 1941

(over) (Back is Blank)

APPENDIX D

STANDARD SAMPLING PROCEDURES

SAMPLING AND FIELD SCREENING PROCEDURES

Introduction

This section outlines procedures followed for collecting soil and groundwater samples, maintaining security and integrity of the samples, and procedures for abandoning a borehole.

Sampling Procedures

Soil and groundwater samples were collected to determine if soil and groundwater at the site were contaminated.

Soil Sampling Procedures

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with a hollow stem auger and a two-inch diameter, 24-inch split spoon sampler. The split spoon sampler was advanced at two-foot intervals by conventional methods, including the attachment of the sampler to an AW rod and standard 140 pound hammer. Adequate soil was collected and split into a sample for field screening and a sample for laboratory analysis.

All drilling tools and equipment were high-pressure steam cleaned prior to the start of sampling work. All sampling tools were also washed with an Alconox™ and reagent water solution between sampling points to prevent cross contamination.

Soil Samples Submitted for Laboratory Analysis

Soil samples submitted for laboratory analysis were collected as split samples from the same location as the samples for field screening. Soil samples submitted

were transferred into the appropriate containers depending on the laboratory analysis needed.

ANALYTE	CONTAINER TYPE	FIELD PRESERVATIVE
GRO	60 ml vial	methanol
DRO	60 ml vial	none
VOC	4 oz. TLC jar	none
PVOC	4 oz. TLC jar	none
TRPH	4 oz. TLC jar	none
PAH	4 oz. TLC jar	none
PCB	4 oz. TLC jar	none
TOTAL LEAD	4 oz. TLC jar	none
TOTAL CADMIUM	4 oz. TLC jar	none
DISPOSAL PARAMETERS	4 oz. TLC jar	none

TLC = teflon lined cap

Samples were then sealed and cooled to 4°C for transport to the laboratory. All collected samples were labeled with the following information:

- Site Name
- Sample Number
- Sample Location
- Date and Time of Collection
- Analysis Requested
- Name of Sampler
- Other Applicable Information (i.e., PID readings, odors)

Procedures for Installation and Development of Groundwater Monitoring Wells

The groundwater monitoring wells were constructed and developed in accordance with requirements of the Wisconsin Administrative Code - Chapter NR 141.00.

Groundwater Sampling Procedures

Following development and purging of the permanent monitoring wells or the temporary wells, groundwater samples were collected by inserting a clean disposable polyethylene bailer into the well. The contents of the bailer were then transferred to the appropriate containers depending on the laboratory analysis needed.

ANALYTE	CONTAINER TYPE	FIELD PRESERVATIVE
GRO	40 ml vial	hydrochloric acid
DRO	1 liter amber bottle	hydrochloric acid
VOC	40 ml vial	hydrochloric acid
PVOC	40 ml vial	hydrochloric acid
TRPH	1 liter amber bottle	hydrochloric acid
PAH	1 liter amber bottle	none
PCB	1 liter amber bottle	none
TOTAL LEAD	250 ml plastic bottle	nitric acid
TOTAL CADMIUM	250 ml plastic bottle	nitric acid

Care was taken to ensure no air space was included. The water sample containers were then sealed and cooled to 4°C for transport to the laboratory. All collected samples were labeled with the following information:

- Site Name
- Sample Number
- Sample Location
- Date and Time of Collection
- Analysis Requested
- Name of Sampler
- Other Applicable Information (i.e., PID readings, odors)

Field Screening Procedures

Samples obtained for field screening were analyzed by a PID using the head-space procedure. Immediately after the split spoon sample tube was opened, instrumental readings (PID levels in ppm) and sample descriptions/remarks were recorded on a soil profile log at the appropriate depth intervals. Results from this screening

survey were used to aid in the selection of samples for laboratory analysis. The PID calibration was checked daily with isobutylene gas and at appropriate time intervals in accordance with WDNR guidelines. The headspace procedure was conducted as follows:

- Headspace samples were collected in clean four-ounce glass jars for each site and filled half-full with the sample material.
- The mouth of the headspace jar was then covered with heavy gauge aluminum foil and sealed with the lid of the jar.
- The sample was then agitated for at least 30 seconds to break soil clods and release headspace vapors.
- When ambient air temperatures were below 70°F, the headspace samples were placed in a warm environment out of direct sunlight and allowed to equilibrate to approximately 70°F. When ambient air temperatures were above 70°F, samples were placed out of direct sunlight and allowed to equilibrate to approximately 70°F.
- Following equilibration, the sample headspace was analyzed by inserting the tip of the PID probe through a single, small hole in the foil seal to a position half-way between the seal and sample surface and then recording the highest instrument readings (benzene equivalent ppm).
- New headspace jars were used for each site. After use, the headspace jars were cleaned with an Alconox™ and water solution and allowed to dry. If no VOC carryover was identified with a PID, the jars were reused; if VOC carryover was identified, the sample jars were discarded.

APPENDIX E

WDNR WELL/DRILLHOLE ABANDONMENT FORM (3300-5W) AND BOREHOLE ABANDONMENT PROCEDURES

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION Well/Drillhole/Borehole Location <u>RO-1</u> County <u>MILWAUKEE</u> <u>NE 1/4 of SW 1/4 of Sec. 36 ; T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable) Gov't Lot: _____ Grid Number _____ Grid Location _____ ft. <input type="checkbox"/> N <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W. Civil Town Name <u>MILWAUKEE</u> Street Address of Well <u>3709 WEST VILLARD AVENUE</u> City, Village <u>MILWAUKEE</u>		(2) FACILITY NAME Original Well Owner (If Known) _____ Present Well Owner _____ Street or Route _____ City, State, Zip Code _____ Facility Well No. and/or Name (If Applicable) <u>RO-1</u> WI Unique Well No. _____ Reason For Abandonment <u>SOIL TEST Boring</u> Date of Abandonment <u>3-29-93</u>
--	--	--

WELL/DRILLHOLE/BOREHOLE INFORMATION Original Well/Drillhole/Borehole Construction Completed On (Date) <u>3-29-93</u> <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u> Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____ Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock Total Well Depth (ft.) <u>51</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u> Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	(4) Depth to Water (Feet) NO WATER ENCOUNTERED Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____ Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No (5) Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____ (6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Cement Grout
---	--

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>51</u>		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN G. KUDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street & Route <u>EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MILWAUKEE WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected _____	District/County _____
Reviewer/Inspector _____	
Follow-up Necessary _____	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-2</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 ; T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-2</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>SOIL TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>3-29-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) <u>3-29-93</u>		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
<input type="checkbox"/> Monitoring Well	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
<input type="checkbox"/> Water Well		Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
<input type="checkbox"/> Drillhole		Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
<input checked="" type="checkbox"/> Borehole		Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		If No, Explain _____	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Total Well Depth (ft.) <u>25</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface)		Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Casing Depth (ft.) <u>N/A</u>		Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
(5) Required Method of Placing Sealing Material			
<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped			
<input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____			
(6) Sealing Materials		For monitoring wells and monitoring well boreholes only	
<input type="checkbox"/> Neat Cement Grout		<input type="checkbox"/> Bentonite Pellets	
<input type="checkbox"/> Sand-Cement (Concrete) Grout		<input type="checkbox"/> Granular Bentonite	
<input type="checkbox"/> Concrete		<input type="checkbox"/> Bentonite - Cement Grout	
<input type="checkbox"/> Clay-Sand Slurry			
<input type="checkbox"/> Bentonite-Sand Slurry			
<input checked="" type="checkbox"/> Chipped Bentonite			

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>25</u>		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REIDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street & Route <u>W. EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MILWAUKEE WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-3</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 : T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable)		Present Well Owner	
Gov't Lot _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-3</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>Soil TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>3-30-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>3-30-93</u>		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Total Well Depth (ft.) <u>25</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u>		(6) Sealing Materials	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
BENTONITE Hole plug	Surface	25		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REDNER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street or Route <u>W. EXECUTIVE DRIVE</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MILWAUKEE WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-4</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 ; T. 8 N. R. 21</u> (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-4</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>SOIL TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>3-30-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>3-30-93</u>	(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____
Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____	(5) Required Method of Placing Sealing Material
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____
Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface)	(6) Sealing Materials
Casing Depth (ft.) <u>N/A</u>	<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Cement Grout

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>21</u>		

Comments:	
Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street & Route <u>W. EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MILWAUKEE, WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION Well/Drillhole/Borehole Location <u>RO-5</u> County <u>MILWAUKEE</u> <u>NE 1/4 of SW 1/4 of Sec. 36 : T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable) Gov't Lot _____ Grid Number _____ Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W. Civil Town Name <u>MILWAUKEE</u> Street Address of Well <u>3709 WEST VILLARD AVENUE</u> City, Village <u>MILWAUKEE</u>		(2) FACILITY NAME Original Well Owner (If Known) _____ Present Well Owner _____ Street or Route _____ City, State, Zip Code _____ Facility Well No. and/or Name (If Applicable) <u>RO5</u> WI Unique Well No. _____ Reason For Abandonment <u>Soil TEST Boring</u> Date of Abandonment <u>3-30-93</u>	
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WELL/DRILLHOLE/BOREHOLE INFORMATION Original Well/Drillhole/Borehole Construction Completed On (Date) <u>3-30-93</u> <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u> Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____ Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u> Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		(4) Depth to Water (Feet) NO WATER ENCOUNTERED Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____ Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No (5) Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____ (6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Clay-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	
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Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>21</u>		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN & REIDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street & Route <u>W. EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MEQUON, WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected _____	District/County _____
Reviewer/Inspector _____	
Follow-up Necessary _____	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-6</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 : T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable)		Present Well Owner	
Gov't Lot _____ Grid Number _____		Street or Route	
Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-6</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>Soil TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>3-30 -93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Well/Drillhole/Borehole Construction Completed On (Date) <u>3-30 -93</u> <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Construction Report Available? <input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Drillhole <u>Soil Profile Log</u> <input checked="" type="checkbox"/> Borehole Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____ Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u> <input checked="" type="checkbox"/> Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u> Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____ Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No (5) Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____ (6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Bentonite - Cement Grout <input checked="" type="checkbox"/> Chipped Bentonite
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Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>21</u>		

Comments:

Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REIDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>3/27/93</u>
Street & Route <u>EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 234-1998</u>
City, State, Zip Code <u>MEQUON, WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-7</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 : T. 8 N. R. 21</u> (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-7</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>SOIL TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>4-1-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>4-1-93</u>		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>SOIL Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u>		(6) Sealing Materials	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout. <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Cement Grout	

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
BENTONITE Hole plug	Surface	21		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REDNER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street or Route <u>WILKINSON DRIVE</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MEQUON, WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-8</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 : T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-8</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>Soil TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>4-1-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>4-1-93</u>		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock Total Well Depth (ft.) <u>5</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u> Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		(6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Near Cement Grout <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Clay-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>5</u>		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REIDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street & Route <u>W. EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 238-1998</u>
City, State, Zip Code <u>MILWAUKEE WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-8B</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 ; T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-8B</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>SOIL TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>4-1-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>4-1-93</u>		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u>		(6) Sealing Materials	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>21</u>		

Comments:		(10) FOR DNR OR COUNTY USE ONLY	
Name of Person or Firm Doing Sealing Work <u>STEPHEN G. ROEDER</u>		Date Received/Inspected	District/County
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>	Reviewer/Inspector	
Street & Route <u>414 EXECUTIVE DRIVE SUITE E</u>	Telephone Number <u>(414) 235-1998</u>	Follow-up Necessary	
City, State, Zip Code <u>MILWAUKEE WI 53082</u>			

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>120-9</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 ; T. 8 N. R. 21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>R0-9</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>SOIL TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>4-1-93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>4-1-93</u>		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u>		(6) Sealing Materials	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>21</u>		

Comments: _____

Name of Person or Firm Doing Sealing Work <u>STEPHEN E. REIDER</u>	
Signature of Person Doing Work <u>[Signature]</u>	Date Signed <u>5/27/93</u>
Street or Route <u>W. EXECUTIVE DRIVE</u>	Telephone Number <u>(414) 235-1998</u>
City, State, Zip Code <u>MEQUON, WI 53092</u>	

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION Well/Drillhole/Borehole Location <u>RO-10</u> County <u>MILWAUKEE</u> NE 1/4 of SW 1/4 of Sec. <u>36</u> : T. <u>8</u> N. R. <u>21</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W (If applicable) Gov't Lot _____ Grid Number _____ Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W. Civil Town Name <u>MILWAUKEE</u> Street Address of Well <u>3709 WEST VILLARD AVENUE</u> City, Village <u>MILWAUKEE</u>		(2) FACILITY NAME Original Well Owner (If Known) _____ Present Well Owner _____ Street or Route _____ City, State, Zip Code _____ Facility Well No. and/or Name (If Applicable) <u>RO-10</u> WI Unique Well No. _____ Reason For Abandonment <u>SOIL TEST Boring</u> Date of Abandonment <u>4-2 -93</u>
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WELL/DRILLHOLE/BOREHOLE INFORMATION Original Well/Drillhole/Borehole Construction Completed On (Date) <u>4-2 -93</u> <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u> Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____ Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u> Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	(4) Depth to Water (Feet) NO WATER ENCOUNTERED Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____ Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No (5) Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____ (6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Cement Grout
---	--

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
BENTONITE Hole plug	Surface	21		

Comments: _____ Name of Person or Firm Doing Sealing Work <u>STEPHEN G. REDER</u> Signature of Person Doing Work <u>[Signature]</u> Date Signed <u>5/27/93</u> Street or Route <u>1000 EXECUTIVE DRIVE SUITE E</u> Telephone Number <u>(414) 238-1998</u> City, State, Zip Code <u>MCQUON WI 53092</u>		(10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected _____ District/County _____ Reviewer/Inspector _____ Follow-up Necessary _____
--	--	--

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location <u>RO-11</u>	County <u>MILWAUKEE</u>	Original Well Owner (If Known)	
<u>NE 1/4 of SW 1/4 of Sec. 36 ; T. 8 N. R. 21</u> (If applicable)		Present Well Owner	
Gov't Lot: _____ Grid Number _____		Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>MILWAUKEE</u>		Facility Well No. and/or Name (If Applicable) <u>RO-11</u>	WI Unique Well No. _____
Street Address of Well <u>3709 WEST VILLARD AVENUE</u>		Reason For Abandonment <u>SOIL TEST Boring</u>	
City, Village <u>MILWAUKEE</u>		Date of Abandonment <u>4-2 -93</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>NO WATER ENCOUNTERED</u>	
Original Well/Drillhole/Borehole Construction Completed On (Date) <u>4-2 -93</u>		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>Soil Profile Log</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Total Well Depth (ft.) <u>21</u> Casing Diameter (ins.) <u>N/A</u> (From ground surface) Casing Depth (ft.) <u>N/A</u>		(6) Sealing Materials	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Near Cement Grout <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Clay-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>BENTONITE Hole plug</u>	<u>Surface</u>	<u>21</u>		

Comments:		(10) FOR	
Name of Person or Firm Doing Sealing Work <u>STEPHEN G. KEDER</u>		Date Received/Inspected <u>5/27/93</u>	
Signature of Person Doing Work <u>[Signature]</u>		Reviewer/Inspector	
Street or Route <u>W. EXECUTIVE DRIVE</u>		Telephone Number <u>(414) 235-1998</u>	
City, State, Zip Code <u>MILWAUKEE, WI 53092</u>		Follow-up Necessary	

Procedures for Abandoning a Borehole

After all necessary soil and groundwater samples were collected at a given borehole, the temporary groundwater monitoring well was dismantled and the borehole was completely backfilled with bentonite and abandoned according to procedures outlined in Chapter NR 141.25 of the Wisconsin Administrative Code. A WDNR borehole abandonment form (Form 3300-5W) was completed for each soil boring and is included in this report.

APPENDIX F

**CHAIN OF CUSTODY AND
SAMPLE SECURITY DOCUMENTATION**

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Use Black Ink Only, Press Hard

PROJ. NO		PROJECT NAME		Total Number of Containers	Analysis										Refrigerated (Yes/No)				
SAMPLERS: (Signature)															Sample type (Grab/Composite)				
AESI															Sample sources (WW, GW, DW, other)				
Lab No.															Preservation Code:				
Yr		Date		Time		Sample Station ID		GRO		PDOC		DRY WT		TOTAL Pb		Analysis		Comments:	
3040245		4/1				ROS-7A		2		X		X		X		X			
3040246		4/1				ROS-7B		2		X		X		X					
3040247		4/1				ROS-8B-A		2		X		X		X		X			
3040248		4/1				ROS-8B-B		2		X		X		X					
3040249		4/1				ROS-9A		2		X		X		X		X			
3040250		4/1				ROS-9B		2		X		X		X					
3040251		4/2				ROS-10A		2		X		X		X		X			
3040252		4/2				ROS-10B		2		X		X		X					
3040253		4/2				ROS-11A		2		X		X		X		X			
3040254		4/2				ROS-11B		2		X		X		X					
3040255		4/1				ROS-8B-B DUPLICATE		1		X		X							
3040256		4/2				STOCK PILE		2		X				X					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time		Report to:											
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time		Name											
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Street											
Remarks:		Date / Time		Received for Laboratory by: (Signature)		Date / Time		City											
Remarks:		Date / Time		Received for Laboratory by: (Signature)		Date / Time		State											
Remarks:		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Zip											
Remarks:		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Phone no.											
Remarks:		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Fax no.											

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

DUE 4/8/93

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

Use Black Ink Only, Press Hard

PROJ. NO		PROJECT NAME	
96804		37TH + VILLARD	
SAMPLERS: (Signature) <i>Stephen G. Reuter</i>			
AESI Lab No.	Yr <u>20</u> Date	Time	Sample Station ID
3040058	3/29		ROS-1A 31-33'
3040059	3/29		ROS-1B 49-51'
3040060	3/29		ROS-1C 9-11'
3040061	3/29		ROS-2A 15-19'
3040062	3/29		ROS-2B 23-25'
3040063	3/30		ROS-3A 9-11'
3040064	3/30		ROS-3B 17-19'
3040065	3/30		ROS-4A 17-19'
3040066	3/30		ROS-5A 5-7'
3040067	3/30		ROS-5A DUPLICATE
3040068	3/30		ROS-5B 19-21'
3040069	3/30		ROS-6A 5-7'
Relinquished by: (Signature) <i>Stephen G. Reuter</i>		Date / Time 3/31	Received by: (Signature) <i>Kevin Kull</i>
Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)
Remarks: FED EX # 6304379572 NO BOTTLE RECEIVED FOR PWC ON ROS-5A DUP. - JUST RUN GRO PER CRYSTAL 4/1/03			

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

PAGE 2 OF 2

Use Black Ink Only, Press Hard

DUE 4/8/93

[illegible]

APPENDIX G

PID CALIBRATION DOCUMENTATION

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: 37TH & VILVARD DATE: 3/29/93

SIGNATURE: Stephen J. Quirk TIME: 7:05 AM

AMBIENT TEMPERATURE: 25°F

SAMPLE EQUILIBRATION TEMPERATURE: 70°F

WEATHER CONDITIONS: FAIR

HNU Model PI 101, Advent Environmental Services, Inc. number #2 was calibrated with 101 parts per million Isobutylene calibration gas which is equivalent in response to 52 parts per million benzene at a gain setting of 9.2 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: N/A

REPAIRS OR CLEANING: N/A

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December 1985.

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: 32TH & VILLARD DATE: 3/30
SIGNATURE: Stephen J. Benter TIME: 7:00 AM
AMBIENT TEMPERATURE: 33° F
SAMPLE EQUILIBRATION TEMPERATURE: 70° F
WEATHER CONDITIONS: FAIR

HNU Model PI 101, Advent Environmental Services, Inc. number 2 was calibrated with 101 parts per million Isobutylene calibration gas which is equivalent in response to 56 parts per million benzene at a gain setting of 9.5 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: N/A
REPAIRS OR CLEANING: N/A

PROCEDURE FOR DAILY CALIBRATION CHECK

- A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.
- B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.
- C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.
- D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December 1985.

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: 37TH & WILKARD DATE: 4/1
SIGNATURE: Stephen D. Reuter TIME: 7:10 AM
AMBIENT TEMPERATURE: 25°F
SAMPLE EQUILIBRATION TEMPERATURE: 70°F
WEATHER CONDITIONS: FAIR

HNU Model PI 101, Advent Environmental Services, Inc. number 2 was calibrated with 105 parts per million Isobutylene calibration gas which is equivalent in response to 56 parts per million benzene at a gain setting of 9.5 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: N/A
REPAIRS OR CLEANING: N/A

PROCEDURE FOR DAILY CALIBRATION CHECK

- Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.
- Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.
- Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.
- Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December 1985.

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: 37TH AND VILLANO DATE: 4/2/93

SIGNATURE: Stephen J. Deute TIME: 7:15 AM

AMBIENT TEMPERATURE: 30°F

SAMPLE EQUILIBRATION TEMPERATURE: 70°F

WEATHER CONDITIONS: FAIR

HNU Model PI 101, Advent Environmental Services, Inc. number 2 was calibrated with 101 parts per million Isobutylene calibration gas which is equivalent in response to 50 parts per million benzene at a gain setting of 9.4 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: N/A

REPAIRS OR CLEANING: N/A

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December 1985.

APPENDIX H

**WDNR SOIL BORING LOG INFORMATION
FORM (4400-122), MONITORING WELL
CONSTRUCTION REPORT FORM (4400-113A),
AND MONITORING WELL DEVELOPMENT FORM (4400-113B)**

- ☐ Solid Waste ☐ Hazardous Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number _____		Boring Number R0-1	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / JOHN		Date Drilling Started 03/29/93 MM DD YY		Date Drilling Completed 03/29/93 MM DD YY	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter 8.25 inches OD	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat. _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NE 1/4 of SW 1/4 of Section 36 , T 8 N, R 21 EW Long _____				Feet _____	
County MILWAUKEE		DNR County Code 41		Civil Town/City/ or Village MILWAUKEE	

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
11-1c	24	7 10	2	Black clay	CL			<1	M					
	24	3 5	4	Brown clay with some pebbles				<1	M					
	24	5 7	6					<1	M					
	24	9 9	8					<1	M					
	24	9 14	10					<1	M					
	24	13 13	12					<1	M					
	24	4 7	14					<1	M					
	24	10 12	16	Brown clay with silt seams				<1	M					
	24	4 7	18					<1	M					
	24	14 17	20					<1	M					
	24	5 10	22					<1	M					
	24	16 14	24					<1	M					
	24	7 8						<1	M					
	24	10 14						<1	M					
	24	7 6						<1	M					
	24	9 14						<1	M					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature]

Firm AESI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeited not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.01, Wis. Stats.

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Page 1 of 2

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number		Boring Number RO-2	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / John		Date Drilling Started 03/29/93 M M DD YY		Date Drilling Completed 03/29/93 M M DD YY	
DNR Facility Well No. _____		DNR Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter 8.25 inches OD	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W			
NE 1/4 of SW 1/4 of Section 36 T 8 N. R 21 EW Long _____		County MILWAUKEE			
DNR County Code 41		Civil Town/City/ or Village MILWAUKEE			

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/ Comments	
Number	Length Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
	NO RECOVERY	24 2 11 9	2	NO RECOVERY				X		X					
	24	3 3 4 5	4	BROWN SILTY CLAY	CL			<1		M					
	24	4 5 10 12	6	BROWN CLAY WITH SILTY CLAY SEAMS				<1		M					
	24	6 9 12 16	8					<1		M					
	24	4 8 10 14	10					<1		M					
	24	4 7 10 13	12	PINK BROWN CLAY WITH SOME PEBBLES				<1		M					
	24	5 8 10 13	14					<1		M					
11-2A	24	3 6 10 11	16					<1		M					CORRELATIVE TO DRC DETECT IN TANK BED
	24	6 9 5 9	18					<1		M					
	24	4 5 6 10	20					<1		M					
	24	4 6 10 12	22					<1		M					
11-2B	24	6 5 11 13	24					<1		M					

CORRELATIVE TO
DRC DEFECT IN
TANK BED

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm AESI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

[illegible]

- ☐ Solid Waste ☐ Hazardous Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number		Boring Number RO-3	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / John		Date Drilling Started 03/30/93 M M D D Y Y		Date Drilling Completed 03/30/93 M M D D Y Y	
DNR Facility Well No. / WI Unique Well No.		Common Well Name		Drilling Method HSA 4.25 ID	
Final Static Water Level Feet MSL		Surface Elevation Feet MSL		Borehole Diameter 8.25 inches OD	
Boring Location State Plane N E S W SE SW NE NW		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W			
County MILWAUKEE		DNR County Code 41		Civil Town/City/ or Village MILWAUKEE	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
		6 7	2	Brown silty clay	CL			42	M					
		11 13												
		5 8	4	Brown clay with some pebbles				42	M					
		12 15												
		5 10	6					42	M					
		14 18												
		6 11	8					42	M					
		16 19												
3A	24	6 7	10					42	M					
		13 15												
		5 11	12					42	M					
		13 15												
		4 7	14					42	M					
		12 15												
		4 8	16					42	M					
		11 13												
3B	24	3 7	18					42	M					
		11 12												
		3 7	20					42	M					
		11 15												
		5 12	22					42	M					
		14 16												
		5 5	24					42	M					
		8 10												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *[Signature]*

Firm **PESI**

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

[illegible]

Route To:

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Page 1 of 1

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number _____		Boring Number 20-4	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / John		Date Drilling Started 03/30/93 M M D D Y Y		Date Drilling Completed 03/30/93 M M D D Y Y	
DNR Facility Well No. _____ WI Unique Well No. _____		Common Well Name _____		Final Static Water Level _____ Feet MSL	
Surface Elevation _____ Feet MSL		Borehole Diameter 8.25 inches OD			
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat. _____		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W			
NE 1/4 of SW 1/4 of Section 36 , T 8 N, R 21 EW Long _____		Feet _____			
County MILWAUKEE		DNR County Code 41		Civil Town/City/ or Village MILWAUKEE	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
	12	35 57	2	LIGHT TAN SAND & GRAVEL - Fill MATERIAL				<1	M					
		32 34 33 68 58 913 611 1212	4 6 8 10	BROWN CLAY WITH SOME GRAVEL	CL			7 185 17 4	M M M M					
		57 910	12					<2	M					
Recovery	NO	99 1110	14	NO RECOVERY				X	X					
	24	56 1610	16	BROWN CLAY WITH SOME GRAVEL	CL			<2	M					
ROS-1/17	24	58 1013	18					<1	M					
	24	89 1613	20					<1	M					
			22	COB @ 21' NO BEDROCK ENCOUNTERED NO GROUNDWATER ENCOUNTERED										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature]

Firm RESI

This form is authorized by Chapters 144.147 and 162 Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.66, Wis. Stats.

Route To:

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Page 1 of 1

Facility/Project Name

ROETTIGERS OIL # 96804

License/Permit/Monitoring Number

Boring Number

RO-5

Boring Drilled By (Firm name and name of crew chief)

WISCONSIN SOIL TESTING
MIKE / JOHN

Date Drilling Started

03/30/193
M M D D Y Y

Date Drilling Completed

03/30/193
M M D D Y Y

Drilling Method

HSA
4.25 ID

DNR Facility Well No.

WI Unique Well No.

Common Well Name

Final Static Water Level

Surface Elevation

Borehole Diameter

Boring Location

State Plane

N

E S/C/N

Lat

Local Grid Location (if applicable)

☐ N

☐ E

NE 1/4 of SW 1/4 of Section 36, T 8 N, R 21 EW Long

Feet ☐ S

Feet ☐ W

County

MILWAUKEE

DNR County Code

41

Civil Town/City/ or Village

MILWAUKEE

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
S-5A	24	5 8	2	BROWN CLAY	CL			150	M					Slight Petroleum odor
	24	9 13	4	DARK GREY SILTY CLAY				262	M					
	24	4 6	6	BROWN CLAY WITH SOME GRAVEL				542	M					
	24	6 9	8					3	M					
	24	3 6	10					3	M					
	24	11 16	12					<1	M					
	24	8 14	14					<1	M					
	24	20 26	16					<1	M					
	24	4 20	18					<1	M					
	24	19 19	20					<1	M					
S-5B	24	7 8	22	COBBLE 21'										
	24	12 14	24	NO BEDROCK ENCOUNTERED NO GROUNDWATER ENCOUNTERED										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm

RESI

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Route To:

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Page 1 of 1

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number		Boring Number RO-6	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / JOHN		Date Drilling Started 0 3 13 0 19 3 M M D D Y Y		Date Drilling Completed 0 3 13 0 19 3 M M D D Y Y	
DNR Facility Well No. / WI Unique Well No.		Common Well Name		Drilling Method HSA	
Final Static Water Level ____ Feet MSL		Surface Elevation ____ Feet MSL		Borehole Diameter 4.25 ID	
Boring Location State Plane _____ N. _____ E SCN / Lat _____		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W			
NE 1/4 of SW 1/4 of Section 36 , T 8 N, R 21 EW Long _____		County MILWAUKEE			
DNR County Code 41		Civil Town/City/ or Village MILWAUKEE			

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
		87												
	24	67	2	DARK GREY SILTY CLAY	CL			143	M					Strong petroclastic odor
	24	56	4	Brown clay with some gravel				565	M					
-6A	24	12 13 5 10	6					300	M					
	24	14 19 6 9	8					6	M					
	24	16 16 5 9	10					4	M					
	24	11 13 5 7	12					<1	M					
	24	9 12 3 7	14					<1	M					
	24	9 11 2 4	16					<1	M					
	24	8 9 5 9	18					<1	M					
11-6B	24	16 11 2 5	20					<1	M					
	24	78	22	ECB @ 21' NO BEDROCK encountered NO groundwater encountered										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm AESI

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Route To:

- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Page 1 of 1

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number _____		Boring Number RO-7	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / John		Date Drilling Started 04/01/93 M M D D Y Y		Date Drilling Completed 04/01/93 M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter 8.25 inches OD	
Boring Location State Plane _____ N. _____ E S/CN _____ Lat _____		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W			
NE 1/4 of SW 1/4 of Section 36 , T 8 N. R 21 EW Long _____		County MILWAUKEE			
DNR County Code 41		Civil Town/City/ or Village MILWAUKEE			

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
		4 3	2	DARK grey silty clay	CL			15	M					
		5 8												
		5 6						8	M					
5-7A	24	9 14	9	Brown clay w. th some gravel										
		6 11	6					75	M					
		15 16												
		7 12	8					3	M					
		19 20												
		9 8	10					21	M					
		13 16												
		5 10	12					<1	M					
		11 13												
		5 8	14					<1	M					
		1 12												
		5 5	16					<1	M					
		10 10												
		3 8	18					<1	M					
		11 13												
7B	24	3 5	20					<1	M					
		8 9												
			22	EOB @ 21'										
				NO BEDROCK ENCOUNTERED										
				NO GROUNDWATER ENCOUNTERED.										
			24											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Michael J. Smith*

Firm **AESI**

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- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number _____		Boring Number R0-8	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / John		Date Drilling Started 04/01/93 M M D D Y Y		Date Drilling Completed 04/01/93 M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter 8.25 inches OD	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
NE 1/4 of SW 1/4 of Section 36 , T 8 N, R 21 EW Long _____		County MILWAUKEE		DNR County Code 41 Civil Town/City/ or Village MILWAUKEE	

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/ Comments
Number	Length Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
		23 33 55 56	2 4	NOT RECOVERED				X X		X X				
24	33 97		6		AUGER REFUSAL @ 5'									
			8											
			10											
			12											
			14											
			16											
			18											
			20											
			22											
			24											

I hereby certify that the information on this form is true and correct to the best of my knowledge.
 Signature: *[Signature]* Firm: **AESI**

- ☐ Solid Waste ☐ Hazardous Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Facility/Project Name: ROETTIGERS OIL # 96804 License/Permit/Monitoring Number: Boring Number: R0-8B

Boring Drilled By (Firm name and name of crew chief): WISCONSIN SOIL TESTING MIKE/JOHN Date Drilling Started: 04/10/193 Date Drilling Completed: 04/10/193 Drilling Method: HSA
M M D D Y Y M M D D Y Y 4.25 ID

DNR Facility Well No.: WI Unique Well No.: Common Well Name: Final Static Water Level: Feet MSL
Surface Elevation: Feet MSL Borehole Diameter: 8.25 inches OD

Boring Location State Plane: NE 1/4 of SW 1/4 of Section 36, T 8 N, R 21 E W Long: Local Grid Location (If applicable):
County: MILWAUKEE DNR County Code: 41 Civil Town/City/Or Village: MILWAUKEE

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
	Not Recovered	32	2	NOT RECOVERED				X		X				
	24	27 89	4	Brown clay with some gravel	CL			<1		M				
	24	44 913	6	Brown clay with brown silt seams <2"				<1		M				
	24	619 1112	8	Brown clay with brown sand seams <2" grading to dark brown clay				<1		M				
> 8B-A	24	46 1013	10					<1		M				
	24	913 1515	12	NOT RECOVERED				X		X				
	24	46 1013	14	DARK brown clay with some gravel	CL									
	24	45 710	16											
	24	44 1011	18											
= 8B	24	35 811	20											
			22	EOB @ 21'										
				NO BEDROCK ENCOUNTERED										
				NO GROUNDWATER ENCOUNTERED										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [Signature] Firm: PESI

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- ☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☐ Underground Tanks
☐ Water Resources
☐ Other

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number		Boring Number 20-9	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / John		Date Drilling Started 0 4 10 1 19 3 M M D D Y Y		Date Drilling Completed 0 4 10 1 19 3 M M D D Y Y	
DNR Facility Well No. / WI Unique Well No.		Common Well Name		Drilling Method HSA	
Boring Location State Plane N. E S C N Lat NE 1/4 of SW 1/4 of Section 36, T 8 N, R 21 E W		Final Static Water Level Feet MSL		Surface Elevation Feet MSL	
County MILWAUKEE		DNR County Code 4 1		Civil Town/City/Village MILWAUKEE	
Local Grid Location (If applicable)		<input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W		Borehole Diameter 8.25 inches OD	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					P 200	ROD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit			
	24	10 8	2	Brown silty clay	CL			<1	M						
	24	12 17	4					<1	M						
	24	6 9	6					<1	M						
	24	9 13	8					<1	M						
	24	6 8	10					<1	M						
	24	10 9	12	Dark Brown clay				<1	M						
	24	9 7	14					<1	M						
15-9A	24	11 11	16					<1	M						
	24	9 9	18					<1	M						
	24	13 18	20					<1	M						
	NIT		22					X	X						
	Recovered		24					<1	M						
	24	5 9	26					<1	M						
	24	10 13	28					<1	M						
	24	5 5	30					<1	M						
	24	9 10	32					<1	M						
	24	9 9	34					<1	M						
15-9B	24	12 12	36					<1	M						
	24	5 8	38					<1	M						
	24	10 12	40					<1	M						
			42	EOB @ 21'											
			44	NO BEDROCK ENCOUNTERED											
			46	NO GROUNDWATER ENCOUNTERED											
			48												
			50												

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature [Signature] Firm AESI

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- ☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Facility/Project Name

ROETTIGERS OIL # 96804

License/Permit/Monitoring Number

Boring Number

RO-10

Boring Drilled By (Firm name and name of crew chief)

WISCONSIN SOIL TESTING
MIKE / JOHN

Date Drilling Started

04/02/93
M M D D Y Y

Date Drilling Completed

04/02/93
M M D D Y Y

Drilling Method

HSA
4.25 ID

DNR Facility Well No.

WI Unique Well No.

Common Well Name

Final Static Water Level

Surface Elevation

Borehole Diameter
8.25 inches OD

Boring Location

State Plane

N

E SCN

Lat

Local Grid Location (If applicable)

☐ N

☐ E

☐ S

☐ W

NE 1/4 of SW 1/4 of Section 36, T 8 N, R 21 EW Long

County

MILWAUKEE

DNR County Code

41

Civil Town/City or Village

MILWAUKEE

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
				<u>NO RECOVERY</u>				<u>X</u>		<u>X</u>				
	<u>12</u>	<u>67</u>	<u>2</u>	<u>Brown clay with some gravel</u>	<u>CL</u>			<u>21</u>		<u>M</u>				
	<u>24</u>	<u>47</u>	<u>4</u>	<u>Brown clay with 1/2" silt seams</u>				<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1215</u>	<u>6</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>812</u>	<u>8</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1214</u>	<u>10</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>59</u>	<u>12</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1013</u>	<u>14</u>					<u>21</u>		<u>M</u>				
<u>15-10A</u>	<u>24</u>	<u>39</u>	<u>16</u>	<u>Dark brown clay with some gravel</u>				<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1315</u>	<u>18</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>610</u>	<u>20</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1114</u>	<u>22</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>511</u>	<u>24</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1414</u>	<u>26</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>47</u>	<u>28</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1112</u>	<u>30</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1010</u>	<u>32</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>1314</u>	<u>34</u>					<u>21</u>		<u>M</u>				
<u>10B</u>	<u>24</u>	<u>44</u>	<u>36</u>					<u>21</u>		<u>M</u>				
	<u>24</u>	<u>89</u>	<u>38</u>					<u>21</u>		<u>M</u>				
			<u>22</u>	<u>EOB @ 21'</u>										
			<u>24</u>	<u>NO BEDROCK encountered</u>										
			<u>26</u>	<u>NO GROUNDWATER encountered</u>										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm

AESI

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- ☐ Solid Waste ☐ Hazardous Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Facility/Project Name ROETTIGERS OIL # 96804		License/Permit/Monitoring Number _____		Boring Number RO-11	
Boring Drilled By (Firm name and name of crew chief) WISCONSIN SOIL TESTING MIKE / JOHN		Date Drilling Started 04/10/21 MM DD YY		Date Drilling Completed 04/10/21 MM DD YY	
DNR Facility Well No. _____ WI Unique Well No. _____		Common Well Name _____		Drilling Method HSA	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter 4.25 ID	
Boring Location State Plane _____ N. _____ E S49N Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
County MILWAUKEE				DNR County Code 41	
Civil Town/City/ or Village MILWAUKEE				_____	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
3	10 3	5 4	2	Brown medium grained sand poorly sorted, angular to subrounded	SC			<1		M				
NO RECOVERY	11 9	4 7	4	NO RECOVERY				X		X				
NO RECOVERY	5 5	6 5	6	NO RECOVERY				X		X				
15-11A	15 20	5 4	8	DARK brown clay with some pebbles	CL			35		M				
	3 7		10					25		M				
	8 1		12					<1		M				
	5 8		14					<1		M				
	10 14		16					<1		M				
	3 5		18					<1		M				
	9 9		20					<1		M				
	3 4		22					<1		M				
	6 8		24					<1		M				
1B	5 8		26					<1		M				
	10 13		28					<1		M				
			30	COB @ 21'										
			32	NO BEDROCK ENCOUNTERED										
			34	NO GROUNDWATER ENCOUNTERED										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Mike J. Smith*

Firm **AESI**

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APPENDIX I

**LOCATION OF DRUMMED AND STOCKPILED
INVESTIGATIVE WASTE**

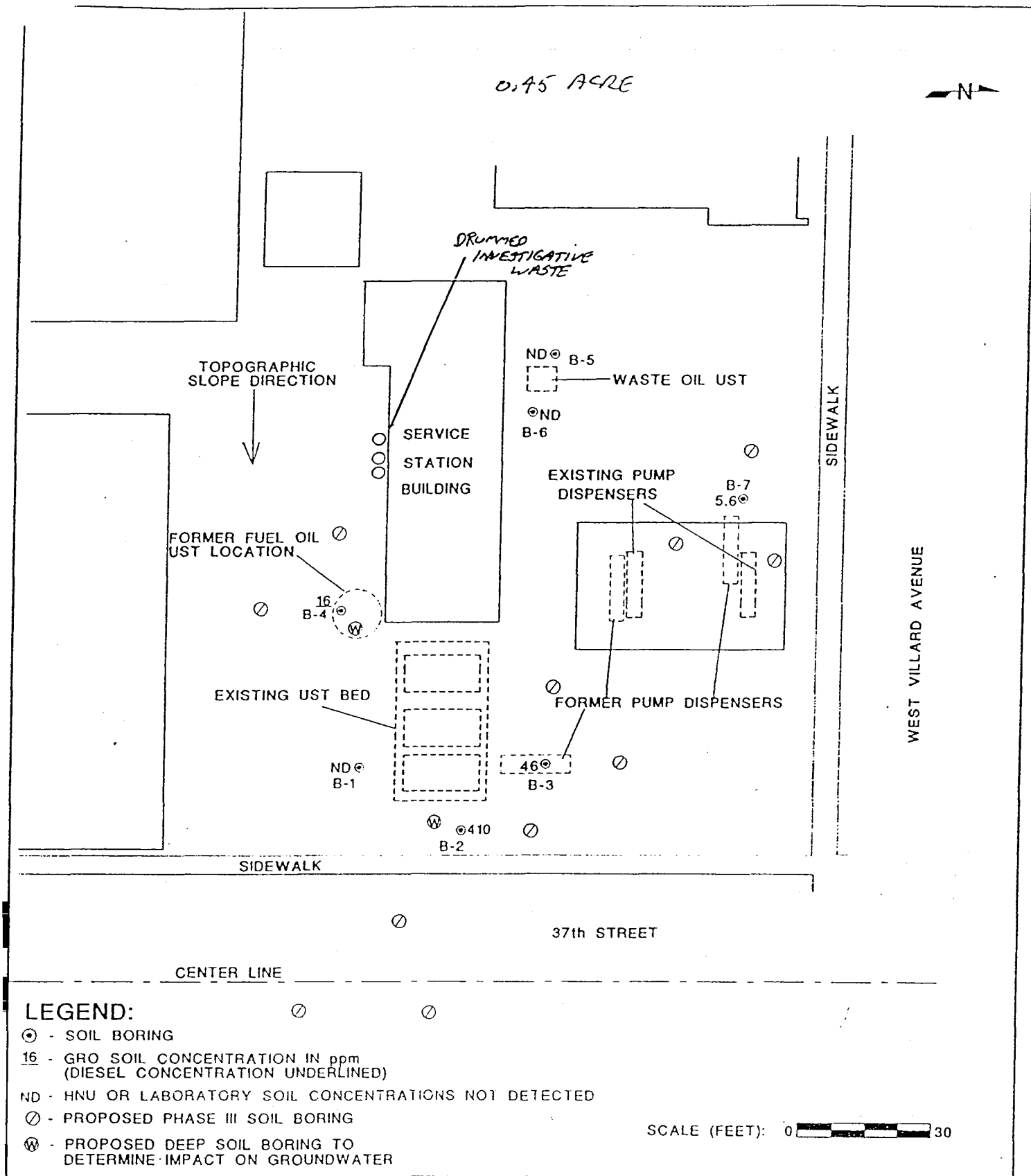


FIGURE 3 - SITE FEATURES

37th AND VILLARD
MILWAUKEE, WISCONSIN

A D V E N T

ENVIRONMENTAL SERVICES, INC.

DATE: 8/10/92

DRAWING # 96804CB

APPENDIX J

ANALYTICAL METHODS AND RESULTS

MILLER ENGINEERS & SCIENTISTS

5308 South Twelfth Street
Sheboygan, WI 53081
(414) 458-6164 FAX (414) 458-0369

LETTER OF TRANSMITTAL

TO Advent Environmental Services, Inc.
6100 W. Executive Dr., Suite E
Mequon, WI 53092

DATE 8/5/93	JOB NO. 12265MZ70
ATTENTION Stephen Reuter	
RE Test Results	
37th & Villard	
Advent Job #96804	

WE ARE SENDING YOU

- ☐ Shop drawings
☐ Copy of letter

☒ Attached

- ☐ Prints
☐ Change order

☐ Under separate cover via _____ the following items:

- ☐ Plans ☐ Samples ☐ Specifications
☒ Test Results

Copies	Date	No.	Description
1	8/5/93	1	Atterberg Limits Results (Sample #GTS-1)
1	8/5/93	2pp	Gradation Analysis (Sample #GTS-1)

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|--|
| <input type="checkbox"/> For approval | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit__copies for approval |
| <input checked="" type="checkbox"/> For your use | <input type="checkbox"/> Approval as noted | <input type="checkbox"/> Submit__copies for distribution |
| <input type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Return__corrected prints |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> _____ | |
| <input type="checkbox"/> FOR BIDS DUE _____ 19__ | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US | |

Enclosed are the test results for the sample delivered to our office on July 29, 1993. The AASHTO classification for the sample GTS-1 is A6. The bulk specific gravity of a remolded sample is 1.86 g/cm³. If you have any questions or comments, your call or letter will receive our prompt response.

COPY TO: _____

SIGNED: _____

Brian J. Leibham

Brian J. Leibham

If enclosures are not as noted, kindly notify us at once.

GRADATION ANALYSIS

CLIENT: Advent Environmental Services
PROJECT: 1993 Lab Testing

JOB NO.: 12265M

SPECIFICATION:
SOURCE: 37th & Villard
SAMPLED BY: ADVENT
SAMPLE NO: GTS-1

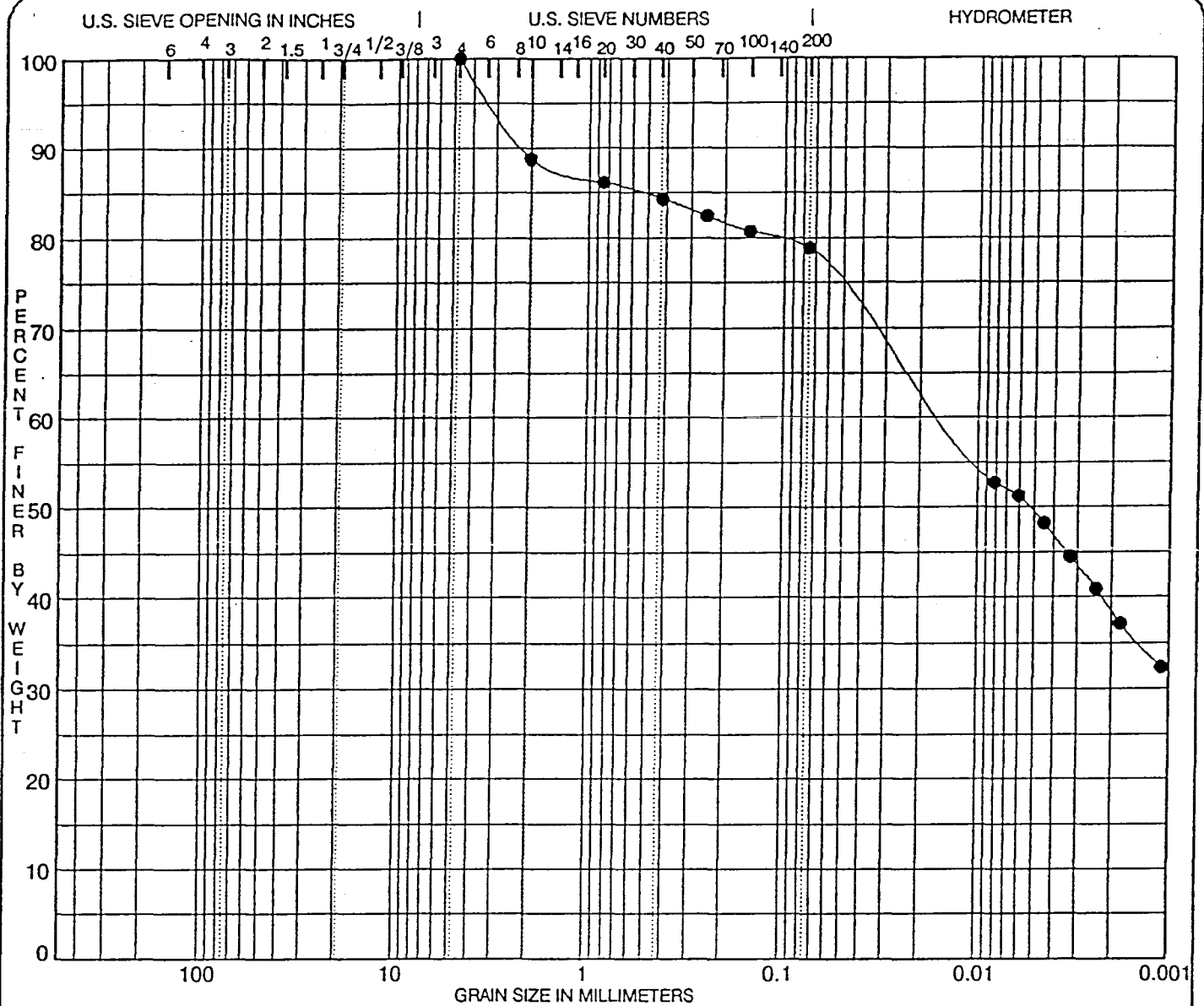
TEST DATE: 08/05/93
TESTED BY: BJL
REVIEWED BY: KAL
DEPTH OF SAMPLE:

TOTAL WEIGHT OF SAMPLE (g): 106.82

SIEVE TEST ANALYSIS (ASTM D422)

SIEVE # (in)	%FINER	REQUIRED SPECS	
		MIN	MAX
3	100.0		
1.5	100.0		
1	100.0		
3/4	100.0		
.5	100.0		
3/8	100.0		
.25	100.0		
SIEVE #			
4	100.0		
8			
10	88.7		
16			
20	86.1		
30			
40	84.3		
50			
60	82.4		
100	80.7		
200	78.8		

MILLER
ENGINEERS
SCIENTISTS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification				MC%	LL	PL	PI	Cc	Cu
● GTS-1	LEAN CLAY with SAND CL				14.0	39.8	16.3	23.5		
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
● GTS-1	4.75	0.02			0.0	21.2	29.6	49.2		

CLIENT: Advent Environmental Services
PROJECT: 1993 Lab Testing

JOB NO.: 12265M
TEST DATE: 08/05/93
SOURCE: 37th & Villard
SAMPLED BY: ADVENT
TESTED BY: BJL
REVIEWED BY: KAL

MILLER
ENGINEERS
SCIENTISTS

INDEX TEST RESULTS
ASTM D422



1380 Busch Parkway • Buffalo Grove, Illinois 60089
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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

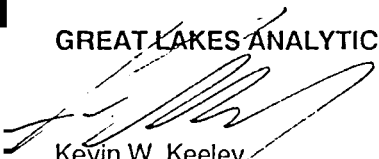
Client Project ID: 96804, 37th & Villard
Sample Descript: Soil
Analysis for: Percent Solids
First Sample #: 304-0058

Sampled: Mar 29-30, 1993
Received: Apr 1, 1993
Analyzed: Apr 5-6, 1993
Reported: Apr 15, 1993

LABORATORY ANALYSIS FOR: Percent Solids

Sample Number	Sample Description	Detection Limit %	Sample Result %
304-0058	ROS-1A	0.10	81
304-0059	ROS-1B	0.10	84
304-0060	ROS-1C	0.10	84
304-0061	ROS-2A	0.10	88
304-0062	ROS-2B	0.10	81
304-0063	ROS-3A	0.10	80
304-0064	ROS-3B	0.10	87
304-0065	ROS-4A	0.10	81
304-0066	ROS-5A	0.10	86
304-0068	ROS-5B	0.10	81
304-0069	ROS-6A	0.10	82

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

3040058.ADV <1>



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Advent Environmental Services
6100 W. Executive, Suite E
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Attention: Stephen G. Reuter

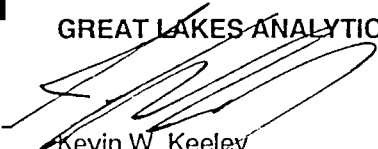
Client Project ID: 96804, 37th & Villard
Sample Descript: Soil
Analysis for: Percent Solids
First Sample #: 304-0070

Sampled: Mar 30, 1993
Received: Apr 1, 1993
Analyzed: Apr 5-6, 1993
Reported: Apr 15, 1993

LABORATORY ANALYSIS FOR: Percent Solids

Sample Number	Sample Description	Detection Limit %	Sample Result %
304-0070	ROS-6B	0.10	80
304-0071	Fuel Oil (F.O.)	0.10	83

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Advent Environmental Services 6100 W. Executive, Suite E Mequon, WI 53092 Attention: Stephen G. Reuter	Client Project ID: 96804, 37th & Villard Sample Descript: Soil Analysis for: Total Lead First Sample #: 304-0059	Sampled: Mar 29-30, 1993 Received: Apr 1, 1993 Analyzed: Apr 9, 1993 Reported: Apr 15, 1993
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LABORATORY ANALYSIS FOR: Total Lead

Sample Number	Sample Description	Detection Limit mg/kg Dry Weight	Sample Result mg/kg Dry Weight
304-0059	ROS-1B	0.30	13
304-0061	ROS-2A	0.28	20
304-0063	ROS-3A	0.31	20
304-0065	ROS-4A	0.31	20
304-0066	ROS-5A	0.29	16
304-0069	ROS-6A	0.30	20

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Laboratory Director

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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-5A	Received: Apr 1, 1993
Mequon, WI 53092		Extracted: Apr 6, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0066	Analyzed: Apr 8, 1993
		Reported: Apr 15, 1993

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
TCLP Lead	0.005	0.0085
Flash Point, Open Cup(F).....		>200
pH.....		9.6
Paint Filter.....		Pass
Specific Gravity.....		2.0

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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

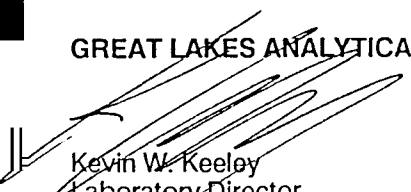
Client Project ID: 96804, 37th & Villard
Sample Descript: Soil: Fuel Oil (F.O.)
Lab Number: 304-0071

Sampled: N/A
Received: Apr 1, 1993
Extracted: Apr 6, 1993
Analyzed: Apr 8, 1993
Reported: Apr 15, 1993

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L <i>ppm</i>
TCLP Lead	0.005	0.013
Flash Point, Open Cup(F).....		>200 <i>13.0 ppm</i>
pH.....		9.8
Paint Filter.....		Pass
Specific Gravity.....		3.0

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Laboratory Director



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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard
Matrix Descript: Soil
Analysis Method: WDNR DRO
First Sample #: 304-0058

Sampled: Mar 29-30, 1993
Received: Apr 1, 1993
Extracted: Apr 1, 1993
Analyzed: Apr 6, 1993
Reported: Apr 15, 1993

DIESEL RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	High B.P. Hydrocarbons mg/kg, Dry Weight (ppm)
304-0058	ROS-1A	6.2	N.D.
304-0059	ROS-1B	6.0	N.D.
304-0060	ROS-1C	6.0	N.D.
304-0061	ROS-2A	5.7	N.D.
304-0062	ROS-2B	6.2	N.D.
304-0063	ROS-3A	6.3	N.D.
304-0064	ROS-3B	5.7	N.D.

High Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Kevin W. Keeley
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Advent Environmental Services
6100 W. Executive, Suite E
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Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard
Matrix Descript: Soil
Analysis Method: WDNR GRO
First Sample #: 304-0065

Sampled: Mar 30, 1993
Received: Apr 1, 1993
Analyzed: Apr 9, 1993
Reported: Apr 15, 1993

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)
304-0065	ROS-4A	1.2	2.7
304-0066	ROS-5A	78	190
304-0067	ROS-5A Duplicate	230	600
304-0068	ROS-5B	1.2	4.2
304-0069	ROS-6A	81	240
304-0070	ROS-6B	1.2	2.5

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Matrix Descript: Water	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: WDNR GRO	Analyzed: Apr 9, 1993
Attention: Stephen G. Reuter	First Sample #: 304-0072	Reported: Apr 15, 1993

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/L (ppm)
304-0072	Methanol Blank	N.D.

Detection Limits: 1.0

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, April 1992 WDNR SW 130 92 REV. Analytes reported as N.D. were not present above the stated limit of detection.

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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 29, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-1A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0058	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
Benzene.....	2.5	N.D.
Ethyl Benzene.....	2.5	N.D.
Methyl-t-Butyl Ether.....	62	N.D.
Toluene.....	2.5	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Kevin W. Keeley
Laboratory Director

3040058.ADV <9>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 29, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-1B	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0059	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	2.4	10
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	2.4	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Kevin W. Keeley
Laboratory Director

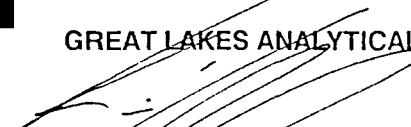
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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 29, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-1C	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0060	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	2.4	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	2.4	5.6
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	18
Xylene.....	6.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Kevin W. Keeley
Laboratory Director

3040058.ADV <11>

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 29, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-2A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0061	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.3	N.D.
Ethyl Benzene.....	2.3	6.0
Methyl-t-Butyl Ether.....	57	N.D.
Toluene.....	2.3	13
124 Trimethylbenzene.....	11	N.D.
135 Trimethylbenzene.....	11	N.D.
Xylene.....	5.7	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Laboratory Director

3040058.ADV <12>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 29, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-2B	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0062	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.5	N.D.
Ethyl Benzene.....	2.5	7.8
Methyl-t-Butyl Ether.....	62	N.D.
Toluene.....	2.5	7.5
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director


3040058.ADV <13>

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-3A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0063	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.5	N.D.
Ethyl Benzene.....	2.5	N.D.
Methyl-t-Butyl Ether.....	63	N.D.
Toluene.....	2.5	2.6
124 Trimethylbenzene.....	13	N.D.
135 Trimethylbenzene.....	13	N.D.
Xylene.....	6.3	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

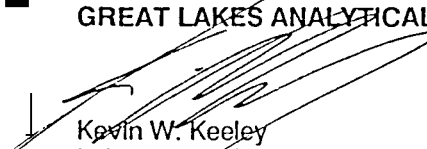
GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-3B	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0064	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.3	N.D.
Ethyl Benzene.....	2.3	N.D.
Methyl-t-Butyl Ether.....	58	N.D.
Toluene.....	2.3	3.4
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	5.8	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040058.ADV <15>

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-4A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0065	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.5	N.D.
Ethyl Benzene.....	2.5	N.D.
Methyl-t-Butyl Ether.....	62	N.D.
Toluene.....	2.5	14
124 Trimethylbenzene.....	12	20
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

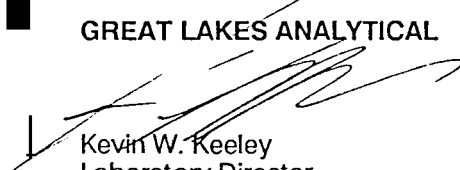
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6100 W. Executive, Suite E	Sample Descript: Soil: ROS-5A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0066	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
---------	---------------------------------------	-------------------------------------

Benzene.....	190	370
Ethyl Benzene.....	190	4,900
Methyl-t-Butyl Ether.....	4,600	N.D.
Toluene.....	190	N.D.
124 Trimethylbenzene.....	930	14,000
135 Trimethylbenzene.....	930	4,000
Xylene.....	460	7,900

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director


3040058.ADV <17>

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-5B	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0068	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.5	N.D.
Ethyl Benzene.....	2.5	17
Methyl-t-Butyl Ether.....	62	N.D.
Toluene.....	2.5	N.D.
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

3040058.ADV <18>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-6A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0069	Reported: Apr 15, 1993

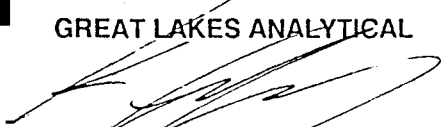
PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
---------	--	---

Benzene.....	200	430
Ethyl Benzene.....	200	4,300
Methyl-t-Butyl Ether.....	4,900	N.D.
Toluene.....	200	490
124 Trimethylbenzene.....	980	12,000
135 Trimethylbenzene.....	980	3,400
Xylene.....	490	15,000

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

3040058.ADV <19>



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(708) 808-7766 FAX (708) 808-7772

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-6B	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 9-13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0070	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.5	N.D.
Ethyl Benzene.....	2.5	11
Methyl-t-Butyl Ether.....	63	N.D.
Toluene.....	2.5	7.1
124 Trimethylbenzene.....	13	N.D.
135 Trimethylbenzene.....	13	N.D.
Xylene.....	6.3	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040058.ADV <20>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: N/A
6100 W. Executive, Suite E	Sample Descript: Liquid: Methanol Blank	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 10, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0072	Reported: Apr 15, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/L}$	Sample Results $\mu\text{g/L}$
Benzene.....	2.0	N.D.
Ethyl Benzene.....	2.0	N.D.
Methyl-T-Butyl Ether.....	50	N.D.
Toluene.....	2.0	N.D.
124 Trimethylbenzene.....	10	N.D.
135 Trimethylbenzene.....	10	N.D.
Xylene.....	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040058.ADV <21>



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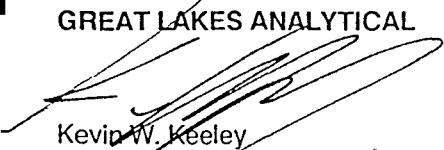
Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Mar 30, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-5A	Received: Apr 1, 1993
Mequon, WI 53092	Analysis Method: EPA 8080	Extracted: Apr 2, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0066	Analyzed: Apr 6, 1993
		Reported: Apr 15, 1993

POLYCHLORINATED BIPHENYLS (EPA 8080)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
PCB 1016.....	60	N.D.
PCB 1221.....	60	N.D.
PCB 1232.....	60	N.D.
PCB 1242.....	60	N.D.
PCB 1248.....	60	N.D.
PCB 1254.....	60	N.D.
PCB 1260.....	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

3040058.ADV <22>

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter


Client Project ID: 96804, 37th & Villard
Sample Descript: Soil: Fuel Oil (F.O.)
Analysis Method: EPA 8080
Lab Number: 304-0071

Sampled: N/A
Received: Apr 1, 1993
Extracted: Apr 2, 1993
Analyzed: Apr 7, 1993
Reported: Apr 15, 1993

POLYCHLORINATED BIPHENYLS (EPA 8080)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
PCB 1016.....	95	N.D.
PCB 1221.....	95	N.D.
PCB 1232.....	95	N.D.
PCB 1242.....	95	N.D.
PCB 1248.....	95	N.D.
PCB 1254.....	95	N.D.
PCB 1260.....	95	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. ReuterClient Project ID: 96804, 37th & Villard
Sample Descript: Soil
Analysis for: TCLP Benzene by 8240
First Sample #: 304-0066Sampled: Mar 30, 1993
Received: Apr 1, 1993
Analyzed: Apr 14, 1993
Reported: Apr 15, 1993**LABORATORY ANALYSIS FOR: TCLP Benzene by 8240**

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
304-0066	ROS-5A	0.40	N.D.
304-0071	Fuel Oil (F.O.)	0.40	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Kevin W. Keeley
Laboratory Director



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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard
Sample Descript: Soil
Analysis for: Percent Solids
First Sample #: 304-0245

Sampled: Apr 1-2, 1993
Received: Apr 5, 1993
Analyzed: Apr 6-7, 1993
Reported: Apr 16, 1993

LABORATORY ANALYSIS FOR: Percent Solids

Sample Number	Sample Description	Detection Limit %	Sample Result %
304-0245	ROS-7A	0.10	84
304-0246	ROS-7B	0.10	81
304-0247	ROS-8B-A	0.10	87
304-0248	ROS-8B-B	0.10	79
304-0249	ROS-9A	0.10	82
304-0250	ROS-9B	0.10	81
304-0251	ROS-10A	0.10	84
304-0252	ROS-10B	0.10	80
304-0253	ROS-11A	0.10	80
304-0254	ROS-11B	0.10	80
304-0256	Stockpile	0.10	83

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Kevin W. Keeley
Laboratory Director

3040245.ADV <1>



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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard
Sample Descript: Soil
Analysis for: Total Lead
First Sample #: 304-0245

Sampled: Apr 1-2, 1993
Received: Apr 5, 1993
Analyzed: Apr 9, 1993
Reported: Apr 16, 1993

LABORATORY ANALYSIS FOR: Total Lead

Sample Number	Sample Description	Detection Limit mg/kg Dry Weight	Sample Result mg/kg Dry Weight
304-0245	ROS-7A	0.30	24
304-0247	ROS-8B-A	0.29	23
304-0249	ROS-9A	0.30	18
304-0251	ROS-10A	0.30	19
304-0253	ROS-11A	0.31	26

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <2>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1-2, 1993
6100 W. Executive, Suite E	Matrix Descript: Soil	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: WDNR GRO	Analyzed: Apr 12, 1993
Attention: Stephen G. Reuter	First Sample #: 304-0245	Reported: Apr 16, 1993

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)
304-0245	ROS-7A	60	190
304-0246	ROS-7B	1.2	1.7
304-0247	ROS-8B-A	4.6	7.4
304-0248	ROS-8B-B	1.3	2.2
304-0249	ROS-9A	1.2	N.D.
304-0250	ROS-9B	1.2	N.D.
304-0251	ROS-10A	1.2	N.D.
304-0252	ROS-10B	1.3	3.8
304-0253	ROS-11A	1.3	5.3
304-0254	ROS-11B	1.3	N.D.

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <3>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1-2, 1993
6100 W. Executive, Suite E	Matrix Descript: Soil	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: WDNR GRO	Analyzed: Apr 12, 1993
Attention: Stephen G. Reuter	First Sample #: 304-0255	Reported: Apr 16, 1993

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)
304-0255	ROS-8B-B Duplicate	N.D.
304-0256	Stockpile	3.9

Detection Limits: 1.2

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, April 1992 WDNR SW 130 92 REV. Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <4>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-7A	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0245	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	96	200
Ethyl Benzene.....	96	620
Methyl-t-Butyl Ether.....	2,400	N.D.
Toluene.....	96	120
124 Trimethylbenzene.....	480	8,300
135 Trimethylbenzene.....	480	1,400
Xylene.....	240	3,100

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <5>

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-7B	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0246	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	2.4	28
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	2.4	9.3
124 Trimethylbenzene.....	12	37
135 Trimethylbenzene.....	12	23
Xylene.....	6.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-8B-A	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0247	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
Benzene.....	4.6	N.D.
Ethyl Benzene.....	4.6	11
Methyl-t-Butyl Ether.....	120	N.D.
Toluene.....	4.6	14
124 Trimethylbenzene.....	23	26
135 Trimethylbenzene.....	23	34
Xylene.....	12	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <7>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-8B-B	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0248	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.6	N.D.
Ethyl Benzene.....	2.6	12
Methyl-t-Butyl Ether.....	65	N.D.
Toluene.....	2.6	6.5
124 Trimethylbenzene.....	13	25
135 Trimethylbenzene.....	13	15
Xylene.....	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <8>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-9A	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0249	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	2.4	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	2.4	9.6
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <9>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 1, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-9B	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0250	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	2.4	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	2.4	11
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.0	7.5

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <10>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 2, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-10A	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0251	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
Benzene.....	2.4	N.D.
Ethyl Benzene.....	2.4	N.D.
Methyl-t-Butyl Ether.....	60	N.D.
Toluene.....	2.4	8.0
124 Trimethylbenzene.....	12	N.D.
135 Trimethylbenzene.....	12	N.D.
Xylene.....	6.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3040245.ADV <11>



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Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 2, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-10B	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0252	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit $\mu\text{g/kg}$, Dry Weight	Sample Results $\mu\text{g/kg}$, Dry Weight
Benzene.....	2.6	N.D.
Ethyl Benzene.....	2.6	15
Methyl-t-Butyl Ether.....	65	N.D.
Toluene.....	2.6	N.D.
124 Trimethylbenzene.....	13	16
135 Trimethylbenzene.....	13	N.D.
Xylene.....	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

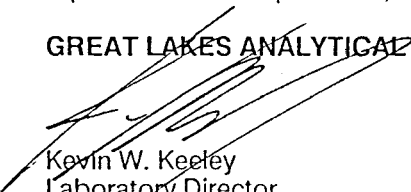
3040245.ADV <12>

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 2, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-11A	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0253	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg, Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	100	190
Ethyl Benzene.....	100	1,400
Methyl-t-Butyl Ether.....	2,500	N.D.
Toluene.....	100	120
124 Trimethylbenzene.....	500	4,900
135 Trimethylbenzene.....	500	N.D.
Xylene.....	250	1,600

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Advent Environmental Services	Client Project ID: 96804, 37th & Villard	Sampled: Apr 2, 1993
6100 W. Executive, Suite E	Sample Descript: Soil: ROS-11B	Received: Apr 5, 1993
Mequon, WI 53092	Analysis Method: EPA 5030/8020	Analyzed: Apr 13, 1993
Attention: Stephen G. Reuter	Lab Number: 304-0254	Reported: Apr 16, 1993

PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8020)

Analyte	Detection Limit µg/kg , Dry Weight	Sample Results µg/kg, Dry Weight
Benzene.....	2.6	N.D.
Ethyl Benzene.....	2.6	18
Methyl-t-Butyl Ether.....	65	N.D.
Toluene.....	2.6	13
124 Trimethylbenzene.....	13	25
135 Trimethylbenzene.....	13	N.D.
Xylene.....	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director



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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard

QC Sample Group: 3040245-254 & 256

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Lead	Percent Solids

Method:	3050/7421	160.3
Analyst:	M. Shull	M. Nazeer
Reporting Units:	mg/kg	mg/kg
Date Analyzed:	Apr 9, 1993	Apr 6, 1993
QC Sample #:	BLK3040793	BLK3040693

Sample Conc.: N.D. N.D.

Spike Conc. Added: 0.015 25

Conc. Matrix Spike: 0.017 25

Matrix Spike % Recovery: 113 100

Conc. Matrix Spike Dup.: 0.016 25

Matrix Spike Duplicate % Recovery: 107 100

Relative % Difference: 6.0 0

Laboratory blank contained the following analytes: None Detected

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$	
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$	3040245.ADV <15>



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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard

QC Sample Group: 3040245-256

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

ANALYTE

WGRO

Method: 8015
Analyst: D. Russell
Reporting Units: ng
Date Analyzed: Apr 12, 1993
QC Sample #: BLK3041293

Sample Conc.: N.D.

Spike Conc.
Added: 2,000

Conc. Matrix
Spike: 1,900

Matrix Spike
% Recovery: 95

Conc. Matrix
Spike Dup.: 2,000

Matrix Spike
Duplicate
% Recovery: 100

Relative
% Difference: 5.1

Laboratory blank contained the following analytes: None Detected

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$	
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$	3040245.ADV <16>



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Advent Environmental Services
6100 W. Executive, Suite E
Mequon, WI 53092
Attention: Stephen G. Reuter

Client Project ID: 96804, 37th & Villard

QC Sample Group: 3040245-255

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

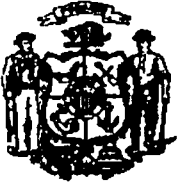
ANALYTE	Benzene	Toluene	Ethyl benzene	O-Xylene
Method:	8020	8020	8020	8020
Analyst:	D. Parikh	D. Parikh	D. Parikh	D. Parikh
Reporting Units:	ng	ng	ng	ng
Date Analyzed:	Apr 14, 1993	Apr 14, 1993	Apr 14, 1993	Apr 14, 1993
QC Sample #:	BLK3041493	BLK3041493	BLK3041493	BLK3041493
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	50	50	50	50
Conc. Matrix Spike:	56	55	54	55
Matrix Spike % Recovery:	112	110	108	110
Conc. Matrix Spike Dup.:	55	55	55	55
Matrix Spike Duplicate % Recovery:	110	110	110	110
Relative % Difference:	1.8	0	1.8	0

Laboratory blank contained the following analytes: None Detected

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$	
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$	3040245.ADV <17>



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

George E. Secretary
Box 12436
Milwaukee, Wisconsin 53212
TELEFAX NO. 414-961-2770

March 2, 1993

File Ref: 4440-3040
County: Milwaukee
ER-LUST

Mr. Don Roettgers
5169 North 37th Street
Milwaukee, WI 53209

Dear Mr. Roettgers:

3709 W. Villard

RE: Roettger's Oil Company - ~~5149 North 37th Street~~, Milwaukee, WI

Wisconsin Department of Natural Resources (WDNR) has been notified that petroleum contamination was discovered January 24, 1993 at the above referenced location. Based on the site specific information provided, this case has been assigned to the Medium Priority Rank group. The purpose of this letter is to inform you of your legal responsibilities to address this situation.

Releases from underground storage tanks regulated under Subtitle I of the Resource Conservation and Recovery Act require compliance with the provisions of 40 CFR Parts 280 and 281. The Environmental Protection Agency (EPA) has the authority to take enforcement action at any time, but will generally not take action against parties cooperating with the state. The WDNR proceeds in LUST cases under the authority of s. 144.76, Wisconsin Statutes, commonly referred to as Wisconsin's Hazardous Substance Spill Law. The definition of "hazardous substance" as found in s. 144.01(4m), Wisconsin Statutes, includes petroleum products.

Wisconsin Statute 144.76(2a) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall notify the Department immediately of any discharge not exempted under sub.(9)."

Wisconsin Statute 144.76(3) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of this state."

Because you possess or control a hazardous substance which has been released to the environment, the Department identifies you as the party responsible for taking the actions necessary to restore the environment. You are required to:

1. Immediately notify the WDNR Spills Hotline at (414) 263-8491 should emergency conditions involving explosive vapors and/or well contamination develop.
2. Conduct an investigation to determine the extent of soil and groundwater contamination.
3. Remediate all of the environmental impacts caused by this situation.
4. Sample private water supply wells which may have been impacted by the release.

The Department suggests that you have a qualified environmental engineer or hydrogeologist direct the remedial investigation, assess the environmental impact, and coordinate the implementation of a cleanup program. Within 15 days of receiving this letter, you should provide the WDNR with the date the remedial investigation will begin.

The Department requires that the location of the tank and/or release be submitted with the work plan. Requirements for location are Latitude, Longitude, 1/4, 1/4, Township, and Range (east or west).

Final documentation of the investigation and cleanup should be prepared according to the guidance enclosed and sent to this office on completion of compliance with all applicable federal, state and local laws and regulations. Remedial actions must adequately cleanup contaminated soil and/or groundwater to current WDNR guidelines and/or standards. All product, soil, wastewater, and sludge must be disposed of in compliance with all applicable federal, state and local laws and regulations. Because the Department is experiencing a backlog of leaking underground storage tank cases of emergency status and your case is not currently ranked as an emergency, your submittals will be reviewed as time permits. Investigation and cleanup should not, however, be delayed pending WDNR review of your case.

The WDNR requests that concise LUST project updates be submitted every six months for all medium priority sites; biannual updates will enable WDNR project managers to monitor the status of remedial investigations and/or corrective actions on projects which are not under direct WDNR oversight.

You are encouraged to contact the Department of Industry, Labor, and Human Relations (DILHR), the state agency that administers the Petroleum Environmental Cleanup Fund (PECFA). This fund may reimburse you for eligible costs associated with the remedial investigation and cleanup. DILHR should be contacted at (608) 267-4545 to obtain current information regarding the PECFA program.

Please be aware that your ability to utilize PECFA funds will be dependent on your cooperation in adequately addressing this problem.

Sincerely,



Giselle Red
Program Assistant, Environmental Repair Section

Enclosures: Remedial Investigation Checklist

c: Advent Environmental
SED Case File

241-17478-0

*new
case
started*

ADVENT

ENVIRONMENTAL SERVICES, INC.

no file

January 14, 1993

Mr. John Feeney
4041 N. Richards Avenue
Milwaukee, WI 53212

JAN 21 1993

Dear Mr. Feeney:

Enclosed is a letter-report of a Phase II environmental assessment that was conducted on an active Union 76 station located at 37th St. and Villard, Milwaukee, Wisconsin. The site is located in the NE 1/4, SW 1/4 of SEC 36, Township 8 North, Range 21 East.

The assessment was conducted as a prepurchase condition requested by an unnamed buyer. Upon notification of the results of this assessment, the present site owner requested that Advent Environmental Services, Inc. (AESI) notify the proper agencies. The present site owner is:

Roettgers' Oil Company
5149 N. 37th Street
Milwaukee, WI 53209

The site contact is Mr. Don Roettgers (414) 466-0890.

Proposals and work plans are currently being drafted to conduct a Phase III investigation to determine the extent and characterize the contamination at this site. The objective of this investigation will be to collect sufficient data to design the most cost-effective remediation strategy.

If you have any questions, please call me at (414) 238-1998. Thank you.

Sincerely,

ADVENT ENVIRONMENTAL SERVICES, INC.



Stephen G. Reuter
Senior Hydrogeologist

SGR/man

cc: Mr. Don Roettgers
5149 N. 37th Street
Milwaukee, WI 53209

JAN 24 1993

ADVENT

ENVIRONMENTAL SERVICES, INC.

August 14, 1992

Mr. Scott Fleming
Weiss, Berzowski, Brady, and Donahue
700 North Water Street
Milwaukee, WI 53202-4273

Dear Mr. Fleming:

Subject: 37th and Villard Environmental Assessment

On July 7, 1992, Advent Environmental Services, Inc. (AESI) completed seven soil borings at depths ranging between 11 and 21 feet at the 37th and Villard site (see Figure 1). Soil samples were collected from the soil borings at locations selected by AESI personnel to determine the status of soils adjacent to three active gasoline underground storage tanks (USTs), one former 1,000-gallon fuel oil UST, one 500-gallon drain oil UST, three former pump islands, and two active pump islands (see Figure 2 for soil boring locations.) Soil sample collection and field screening procedures are included in Appendix A. Soil boring logs and soil descriptions are included in Appendix B. Copies of laboratory analytical data are included in Appendix C.

The field and laboratory results are summarized as follows:

- Boring B-1: B-1 was located approximately 8 feet south of the UST bed containing three active gasoline USTs. Boring B-1 was continuously sampled from the 5 to 21 foot depth interval. Field screening of soil samples with a photoionization detector (PID) did not reveal any readings above background levels (0 parts per million [ppm]). Laboratory analysis of soil sample BS-1 collected at the 19 to 21 foot depth interval did not reveal any GROs above the 5.0 mg/kg (ppm) laboratory detection limit.
- Boring B-2: B-2 was located approximately 6 feet east of the UST bed containing three active gasoline USTs. Boring B-2 was continuously sampled from the 5 to 21 foot depth interval. Field screening of soil samples with a PID revealed readings of 120, 25, and <1 ppm in the 5 to 7, 7 to 9, and 9 to 11 foot depth intervals, respectively. Laboratory analysis of soil sample BS-2 collected from the 5 to 7 foot depth interval revealed GROs at a concentration of 410 mg/kg (ppm).

- Boring B-3: B-3 was located approximately 12 feet north of the UST bed containing the three gasoline USTs and directly on the location of a former pump island. Boring B-3 was continuously sampled from the 3 to 21 foot depth interval. Field screening of soil samples with a PID revealed readings of 125, 40, and 2 ppm in the 3 to 5, 5 to 7, and 7 to 9 foot depth intervals, respectively. Laboratory analysis of soil sample BS-3 collected from the 3 to 5 foot depth interval revealed GROs at a concentration of 46 mg/kg (ppm).
- Boring B-4: B-4 was located approximately 10 feet south of the southeast corner of the service station building near the location of the former fuel oil UST. Boring B-4 was continuously sampled from the 3 to 17 foot depth interval. Field screening of soil samples with a PID did not reveal any readings above background levels (0 ppm). Laboratory analysis of soil sample BS-4 collected in the 15 to 17 foot depth interval revealed a DRO concentration of 16 mg/kg (ppm).
- Boring B-5: Boring B-5 was located on the west side of the site and west of the existing waste oil UST. Boring B-5 was continuously sampled from the 3 to 15 foot depth interval. Field screening of soil samples with a PID did not reveal any readings above background levels (0 ppm). Laboratory analysis of soil sample BS-5 collected at the 11 to 13 foot depth interval did not reveal any total recoverable petroleum hydrocarbons (TRPHs) above the 5.0 laboratory detection limit.
- Boring B-6: B-6 was located on the west side of the site, east of the existing waste oil UST. Boring B-6 was continuously sampled from the 3 to 15 foot depth interval. Field screening of soil samples with a PID did not reveal readings above background levels (0 ppm). Laboratory analysis of soil sample BS-6 collected at the 9 to 11 foot depth interval did not reveal any TRPHs above the 5.0 laboratory detection limit.
- Boring B-7: B-7 was located west of the existing pump islands. Boring B-7 was continuously sampled from the 1 to 11 foot depth interval. Field screening with a PID did not reveal any readings above background levels (0 ppm). Laboratory analysis of soil sample BS-7 collected at the 9 to 11 foot depth interval revealed GROs at a concentration of 5.6 mg/kg (ppm).

Table 1 shows the results of laboratory analyses and field screening for each soil sample.

Table 1					
Results of Laboratory Analyses and Field Screening					
Sample	Depth (feet)	PID Reading (ppm)	GROs (mg/kg)	DROs (mg/kg)	TRPHs (ppm)
BS-1	19 - 21	0	ND	NA	NA
BS-2	5 - 7	120	410	NA	NA
BS-3	3 - 5	125	46	NA	NA
BS-4	15 - 17	0	NA	16	NA
BS-5	11 - 13	0	NA	NA	ND
BS-6	9 - 11	0	NA	NA	ND
BS-7	9 - 11	0	5.6	NA	NA
Laboratory Detection Limits	---	---	5.0	5.0	5.0

ND Not detected above laboratory detection limits
NA Not analyzed

DISCUSSION

Based upon the results of laboratory analyses and field screening, petroleum-contaminated soil was identified in soil borings B-2 and B-3 near the three active gasoline USTs. The contamination was detected in the 5 to 11 foot depth interval and may also exist in the interval from 5 feet to the ground surface that was not field screened.

Petroleum contamination was also identified by laboratory analysis in boring B-4 near the former fuel oil UST location; no PID readings were observed in this boring. No indication of waste oil contamination was found near the waste oil UST in the areas investigated. No PID readings or TRPHs were detected in borings B-5 or B-6. Petroleum contamination was also identified by laboratory analysis in boring B-7 near a former and active pump dispenser; no PID readings were indicated in this boring.

RECOMMENDATIONS

AESI recommends that the owner of the site be informed of the petroleum contamination identified in order to comply with Wisconsin Statutes 144.76(2a) and 144.76(3).

Wisconsin Statute 144.76(2a) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall notify the Department immediately of any discharge not exempted under sub. (9)."

Wisconsin Statute 144.76(3) states: "A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of this state."

AESI also recommends that additional soil borings and soil sampling be completed at the site according to Wisconsin Department of Natural Resources (WDNR) Leaking Underground Storage Tank (LUST) guidance to define the horizontal and vertical extent of contaminants identified.

If you have any questions or concerns, please do not hesitate to call at 238-1998.

Sincerely,

ADVENT ENVIRONMENTAL SERVICES, INC.



Randall S. Igel
Environmental Specialist

RI/man
Enclosure

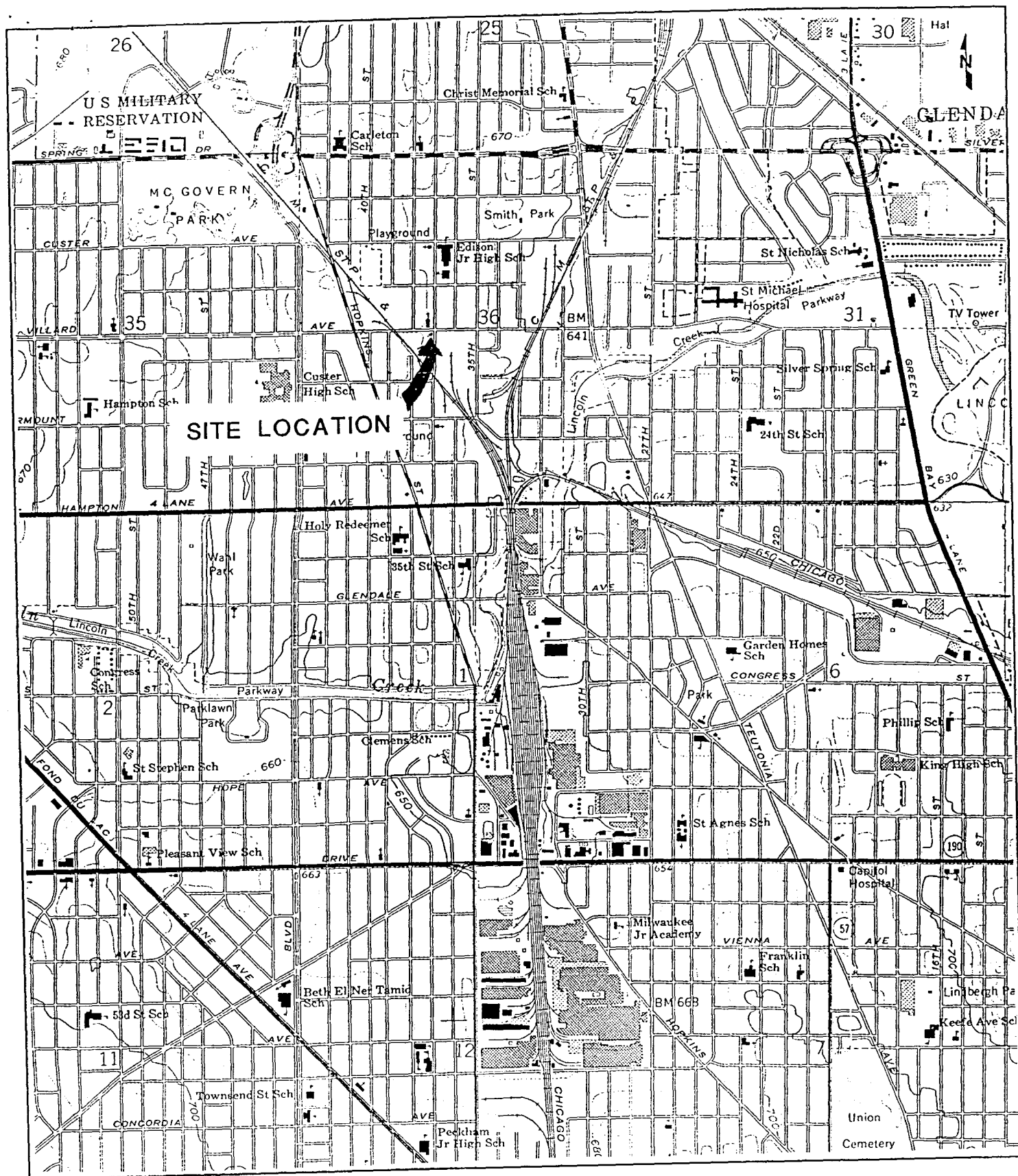


FIGURE 1 SITE LOCATION
37th AND VILLARD SITE
MILWAUKEE, WISCONSIN

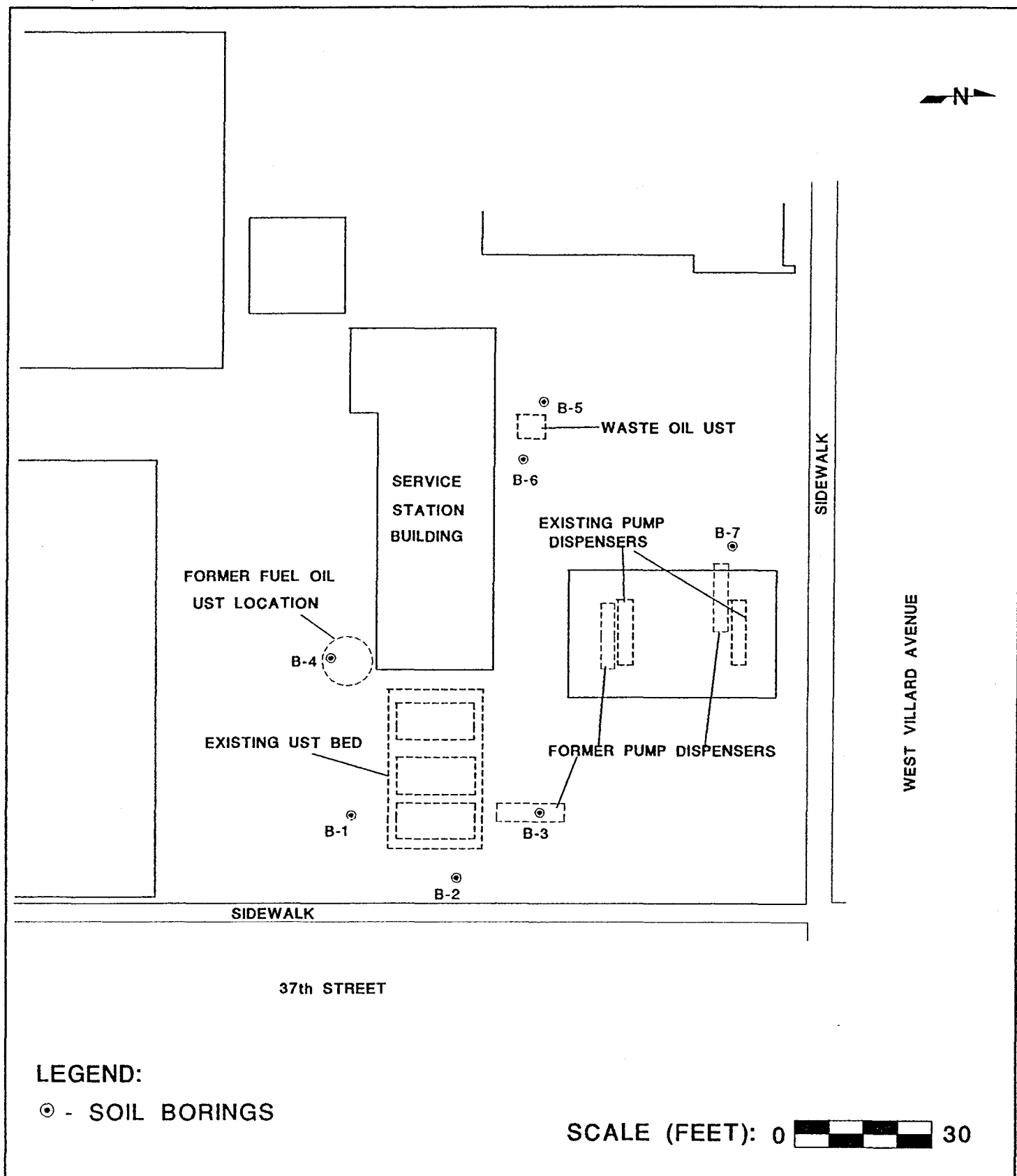


QUADRANGLE LOCATION

A D V E N T

ENVIRONMENTAL SERVICES, INC.

AESI # 96804



SAMPLING AND FIELD SCREENING PROCEDURES

Introduction

This section outlines procedures followed for collecting soil samples, maintaining security and integrity of the samples, and procedures for abandoning a borehole.

Sampling Procedures

Soil samples were collected to determine if soil at the site was contaminated.

Soil Sampling Procedures

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with a hollow stem auger and a two-inch diameter, 24-inch split spoon sampler. The split spoon sampler was advanced at two foot intervals by conventional methods, including the attachment of the sampler to an AW rod and standard 140 pound hammer. Adequate soil was collected and split into a sample for field screening and a sample for laboratory analysis.

All drilling tools and equipment were high-pressure steam cleaned prior to the start of sampling work. All sampling tools were also washed with an AlconoxTM and reagent water solution between sampling points to prevent cross contamination.

Field Screening Procedures

Samples obtained for field screening were analyzed by a PID using the headspace procedure. Immediately after the split spoon sample tube was opened, instrumental readings (PID levels in ppm) and sample descriptions/remarks were recorded on a soil profile log at the appropriate depth intervals. Results from this

screening survey were used to aid in the selection of samples for laboratory analysis. The PID calibration was checked daily with isobutylene gas and at appropriate time intervals in accordance with WDNR guidelines. The headspace procedure was conducted as follows:

- Headspace samples were collected in clean four-ounce glass jars for each site and were half-full with the sample material.
- The mouth of the headspace jar was then covered with heavy gauge aluminum foil and sealed with the lid of the jar.
- The sample was then agitated for at least 30 seconds to break soil clods and release headspace vapors.
- When ambient air temperatures were below 70°F, the headspace samples were placed in a warm environment out of direct sunlight and allowed to equilibrate to approximately 70°F. When ambient air temperatures were above 70°F samples were placed out of direct sunlight and allowed to equilibrate approximately 70°F.
- Following equilibration, the sample headspace was analyzed by inserting the tip of the PID probe through a single, small hole in the foil seal to a position half-way between the seal and sample surface and then recording the highest instrument readings (benzene equivalent ppm).
- New headspace jars were used for each site; however, used headspace jars on a site were cleaned with an Alconox™ and water solution and allowed to

dry. If no VOC carryover was identified with a PID, the jars were reused; if

VOC carryover was identified, the sample jars were discarded.

Soil Samples Submitted for Laboratory Analysis

Soil samples were submitted for laboratory analysis were collected as split samples from the same location as the samples for field screening. Soil samples submitted were transferred into the appropriate containers depending on the laboratory analysis needed.

ANALYTE	CONTAINER TYPE	FIELD PRESERVATIVE
GRO	60 ml vial	methanol
DRO	60 ml vial	none
VOC	4 oz. TLC jar	none
PVOC	4 oz. TLC jar	none
TRPH	4 oz. TLC jar	none
PAH	4 oz. TLC jar	none
PCB	4 oz. TLC jar	none
TOTAL LEAD	4 oz. TLC jar	none
TOTAL CADMIUM	4 oz. TLC jar	none
DISPOSAL PARAMETERS	4 oz. TLC jar	none

TLC = teflon lined cap

Samples were then sealed and cooled to 4°C for transport to the laboratory. All collected samples were labeled with the following information:

- Site Name
- Sample Number
- Sample Location
- Date and Time of Collection
- Analysis Requested
- Name of Sampler
- Other Applicable Information (ie. PID readings, odors)

Chain of Custody Procedures

A chain of custody record was fully completed in triplicate by the AESI sampler immediately following sample collection. The chain of custody record was kept with the samples during transport to the laboratory. When transferring sample custody the individuals relinquishing and receiving them signed, dated, and noted the time on the chain of custody record. A designated sample custodian accepted custody of the shipped samples and verified that the sample identification numbers matched those on the chain of custody record. A copy of the chain of custody record was then retained by the laboratory until analyses were completed. The record was then transferred to the site file with the analytical results.

Procedures for Abandoning a Borehole

After all necessary soil samples were collected at a given borehole, the borehole was completed backfilled with bentonite and abandoned according to procedures outlined in Chapter NR 141.25 of the Wisconsin Administrative Code. A WDNR borehole abandonment form (Form 3300-5W) was completed for each soil boring and is included in this report.

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-1</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N, _____ E S/C/N Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____		T _____ N, R _____ E/W		Long _____	
County _____		DNR County Code _____		Civil Town/City/ or Village _____	

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					P 200	RQD/ Comments
Number	Length Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit			
			2												
			4												
	24	4.5 3.11	6	Firm Brown Clay with few mottles	CL			0							No odor
	24	7.0 12.14	8	Firm Brown clay with few mottles	CL			0							
	24	6.7 10.10	10	Firm Brown clay no mottles	CL			0							
	24	5.7 9.12	12	Firm Gray/Brown clay	CL			0							
	24	4.6 6.12	14	Firm Gray/Brown clay	CL			0							
	24	4.5 6.9	16	Firm Gray /Brown clay	CL			0							
	24	5.5 8.16	18	Gray /Brown Clay	CL			0							
-1	24	4.5 9.11	20	Gray/Brown Clay Firm with wet seams	CL			0							
			22	EOB 210'											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Samuel S. Hall Firm Robert Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name <u>37th & Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-2</u>	
Boring Drilled By (Firm name and name of crew chief) <u>WISCONSIN SOIL TESTING</u>		Date Drilling Started <u>07/02/92</u> M M D D Y Y		Date Drilling Completed <u>07/02/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Drilling Method <u>Hollow-stem Auger</u>	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W			
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W _____		Long _____ Feet _____ Feet _____ Feet _____ Feet			
County <u>MILWAUKEE</u>		DNR County Code _____		Civil Town/City/ or Village _____	

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
			4											
35-2	24	4,5 7,9	6	CL Firm Brown Clay w/ marbles	CL			120						moderate Petroleum odor
	24	6,7 11,13	8	Firm Brown clay	CL			25						Slight Pet. odor
	24	4,8 10,11	10	Firm Brown clay with gravel	CL			<1						
	24	5,7 9,8	12	Firm Brown clay with gravel	CL			0						
	24	5,7 7,9	14	Firm Brown clay with gravel	CL			0						
	24	4,6 8,9	16	Firm Brown clay	CL			0						
	24	3,5 7,7	18	Firm Brown clay	CL			0						
	24	4,5 6,6	20	Firm Brown clay with gravel	CL			0						
			22											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Marshall L. Deel Firm Advent Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name <u>377A + VILLARD</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-3</u>	
Boring Drilled By (Firm name and name of crew chief) <u>WISCONSIN SOIL TESTING</u>		Date Drilling Started <u>07102192</u> M M D D Y Y		Date Drilling Completed <u>07102192</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) _____ Feet <input type="checkbox"/> N _____ Feet <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W Long _____		County <u>MILWAUKEE</u>			
DNR County Code _____		Civil Town/City/ or Village _____			

Sample Number	Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
	Length Recovered (in)									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
				2												
BS-3	24	4.4 7.10		4	Brown firm clay with mottling	CL			125							Slight Pet odor
	24	5.6 9.10		6	Brown firm clay with gravel & mottling	CL			40							Slight Pet. odor
	24	6.9 12.15		8	Brown firm clay with gravel	CL			2							NO PET odor
	24	5.9 11.14		10	Firm Brown clay with gravel	CL			0							NO PET odor
	24	5.7 10.13		12	Firm Brown clay with gravel	CL			0							
	24	4.7 8.11		14	Firm Brown clay with gravel	CL			0							
	24	4.8 8.12		16	Firm Brown clay with gravel	CL			0							
	24	4.7 8.10		18	Firm Brown clay with gravel	CL			0							
	24	4.5 6.8		20	Brown clay with gravel	CL			0							
				22												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Randall L. Dyer Firm Advent Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

Page 1 of 1

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-4</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N, _____ E S/C/N _____ Lat _____		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W			
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W _____ Long _____					
County <u>Milwaukee</u>		DNR County Code <u>41</u>		Civil Town/City/ or Village <u>Milwaukee</u>	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
	24	34 59	4	Grey/Brown firm clay with mottling and gravel				0						NO
	24	46 811	6	Red/Brown Firm clay with gravel	CL			0						Petroleum odor
	24	67 1115	8					0						
	24	68 1013	10					0						
	24	58 1010	12					0						
	24	24 67	14					0						
S-4	24	54 56	16					0						
			18	EOB 17'										
			20											
			22											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Karroll S. Del Firm Advent Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-5</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W Long _____				Feet _____ Feet _____	
County <u>MILWAUKEE</u>		DNR County Code <u>41</u>		Civil Town/City/ or Village <u>MILWAUKEE</u>	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
	24	46 1913	4	Firm Red/Brown clay with mottles				0						No petroleum odor
	24	57 99	6	Red/brown clay interspersed with FG well-sorted sand				0						
	24	57 79	8	Firm grey clay with Red/Brown FG sand layer	CL			0						
	24	78 810	10	FGrey clay with CG sand layer				0						
35-5	24	47 89	12	Firm grey clay				0						
	24	57 1014	14	Firm grey clay with gravel				0						
			16	EOB 15'										
			18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Donald A. Adel Firm Advent Environmental

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- ☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-6</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. WI Unique Well No.		Common Well Name		Final Static Water Level _____ Feet MSL	
				Surface Elevation _____ Feet MSL	
				Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N, _____ E S/C/N Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E _____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E/W Long _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
County <u>Milwaukee</u>		DNR County Code <u>41</u>		Civil Town/City/ or Village <u>Milwaukee</u>	

Sample Number	Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
			2											
	24	56 911	4	Firm brown clay with nodules 1.5" Red/Brown F.G. sand layer				0						No petroleum odor
	24	95 79	6	Red/Brown F.G. sand with Red Brown clay				0						
	24	57 911	8	Poorly sorted sand + gravel	CL			0						
35-6	24	56 911	10	Firm grey clay with Red/ Brown F.G. sand layers				0						
	24	45 69	12	Firm grey clay with gravel				0						
	24	57 710	14					0						
			16	GOSS 15"										
			18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Harold S. Sidel

Firm

Potent Environmental

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name <u>37th + Villard</u>		License/Permit/Monitoring Number _____		Boring Number <u>B-7</u>	
Boring Drilled By (Firm name and name of crew chief) <u>Wisconsin Soil Testing</u>		Date Drilling Started <u>07/07/92</u> M M D D Y Y		Date Drilling Completed <u>07/07/92</u> M M D D Y Y	
DNR Facility Well No. _____		WI Unique Well No. _____		Common Well Name _____	
Final Static Water Level _____ Feet MSL		Surface Elevation _____ Feet MSL		Borehole Diameter <u>6.25</u> inches	
Boring Location State Plane _____ N. _____ E S/C/N _____ Lat _____				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W _____ Long _____				Feet _____ Feet _____	
County <u>Milwaukee</u>		DNR County Code <u>41</u>		Civil Town/City/ or Village <u>Milwaukee</u>	

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number	Length Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
	24	45 69	2	Brown firm clay with nodules	CL			0						No petr odor
	24	55 810	4	2" F.G. sand layer at 2"		0								
	24	45 710	6	Red/Brown clay with F.G. sand		0								
	24	45 57	8	Grey/Brown firm clay with gravel		0								
5-7	2	45 77	10			0								
			12	EOB 11"										
			14											
			16											
			18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Donald L. [illegible] Firm [illegible]

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Precision Analytical Lab, Inc
205 West Galena
Milwaukee, WI 53212

Phone: (414) 272-5222

Advent Environmental
P.O. Box 246
Port Washington, WI 53074

Attn:
Invoice Number:

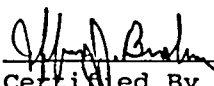
Order #: 92-07-114
Date: 07/27/92 09:39
Work ID: 96804
Date Received: 07/08/92
Date Completed: 07/27/92
Client Code: ADVENT

SAMPLE IDENTIFICATION

<u>Sample Number</u>	<u>Sample Description</u>
01	BS-1
02	BS-2
03	BS-3
04	BS-4

<u>Sample Number</u>	<u>Sample Description</u>
05	BS-5
06	BS-6
07	BS-7

Laboratory ID Number (Wisconsin DNR): 241369260



Certified By
Jeff Bushner

Order # 92-07-114
07/27/92 09:39

Precision Analytical Lab, Inc
TEST RESULTS BY SAMPLE

Page 2

Sample: 01A BS-1

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Mod. GRO (WDNR)	< 5.0		mg/kg	07/16/92	SEL

Sample: 02A BS-2

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Mod. GRO (WDNR)	410		mg/kg	07/16/92	SEL

Sample: 03A BS-3

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Mod. GRO (WDNR)	46		mg/kg	07/22/92	SEL

Sample: 04A BS-4

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Mod. DRO (WDNR)	16		mg/kg	07/18/92	SEL

Sample: 05A BS-5

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
TRPH, Soil	< 5.0		ppm	07/14/92	CEP

Sample: 06A BS-6

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
TRPH, Soil	< 5.0		ppm	07/14/92	CEP

Sample: 07A BS-7

Collected: 07/07/92

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Mod. GRO (WDNR)	5.6		mg/kg	07/16/92	SEL

Order # 92-07-114
07/27/92 09:39

Precision Analytical Lab, Inc
REPORT COMMENTS

Page 3

The organic data is reported out on a dry-weight basis.

Sample was covered air tight in approved container, shipped in cooler from the source to our lab, temperature upon arrival was 4 degrees C.

The samples ordered for TRPH were analyzed by Modified EPA Method 9073.

The samples ordered for GRO were analyzed by the Wisconsin DNR Modified GRO method.

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Use Black Ink Only, Press Hard

[illegible]

#3040

Site Name: Roettgers' Oil Company
5169 N. 37th St 3709 W. Villard
District: SED County: 41
Address: _____
PMN: _____ FID: _____
Proj Mgr: J. Feeney
Support Person: _____
Legal Municipality: _____
Legal Desc: _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ E/W _____

Date of Initial Contact: 1/24/93 Date of Letter: 3/2/93 Date Site Closure Approved: 9/20/94

Status: ☒ 1 = State Lead ☒ 2 = RP Lead
Priority Screening: ☒ 1 = High ☒ 2 = Medium ☐ 3 = Low ☐ 4 = Unknown
Funding Source: ☒ 1 = RP ☐ 2 = LTF ☐ 3 = EF ☐ 4 = SF ☐ 5 = None ☐ 6 = Other (Describe In Comments) ☐ 7 = EPA (Emergency Resp)
PECFA Review Requested (v) _____ Yes _____ No
Date PECFA Request Received (mm/dd/yy) _____ / _____ / _____
Lust Trust Eligible: ☐ 1 = Federal ☐ 2 = Non-Federal
Score: _____

CASE STATUS			
(v) As Appropriate	Date Initiated (mm/dd/yy)	Date Completed (mm/dd/yy)	Comments
_____ No Action Taken (N)			
_____ Emergency (E)	____/____/____	____/____/____	
_____ Emergency Response (R)	____/____/____	____/____/____	
_____ Field Investigation (I)	____/____/____	____/____/____	
_____ Remedial Action (C)	____/____/____	____/____/____	
_____ Long Term Monitoring (L)	____/____/____	____/____/____	

(v) All Appropriate	Known Impacts (v)	Potential Impacts (v)	Substances (v)
_____ Fire/Explosion Threat (1)	_____	_____	_____ Leaded Gas (1)
_____ Contaminated Private Well (2)	_____	_____	_____ Unleaded Gas (2)
_____ Contaminated Public Well (3)	_____	_____	_____ Diesel (3)
_____ Groundwater Contamination (4)	_____	_____	<input checked="" type="checkbox"/> Fuel Oil (4)
_____ Soil Contamination (5)	_____	_____	_____ Unknown Hydrocarbons (5)
_____ Other: (6)	_____	_____	<input checked="" type="checkbox"/> Other (8) <u>water oil</u>
			Quantity Discharged _____
			_____ VOCS (6)
			_____ Pesticide (7)

Responsible party: Don Roettgers
Name: _____
Address: 5169 N 37th St
Milwaukee 53209
Telephone: 414 / 466-0890
(list additional on separate list and attach.)
Consultant: Advent
Contact: _____
Address: _____
Telephone: _____ / _____
Amount Committed: \$ _____
Amount Spent: \$ _____
(list additional on separate list and attach.)

ENFORCEMENT ACTION TAKEN

- | | | | |
|--|---------------------------|-----------------------------|---------------------------|
| 01 = Inf. Contact, Resp Initiated | 08 = Adequate Response | 15 = Formal Enf Conf | 22 = Draft Referral |
| 02 = RP Letter, Resp Initiated | 09 = Progress Being Made | 16 = Enf Conf. Letter | 23 = Referral to DOJ |
| 03 = NTC of Non Compliance | 10 = Defer Enforcement | 17 = Admin. Order Proposed | 24 = Referral to DA |
| 04 = Inf. Enf. Conf. Resp Initiated | 11 = Close Out | 18 = Admin. Order Final | 25 = Referral to EPA |
| 05 = Follow-up Enf. Conf. Resp Initiated | 12 = Recommend NFA | 19 = Admin. Order Modified | 26 = Continuing Violation |
| 06 = Inspection Letter | 13 = FWD to Secondary Enf | 20 = Admin. Order Cancelled | 27 = See Next Violation |
| 07 = Response Received | 14 = Notice of Violation | 21 = Contest Case Hearing | 28 = Site Inspection |
- 99 = Other Action: _____

ACTION (code from above)	DATE (mm/dd/yy)	COMMENT
<u>01</u>	<u>1/24/93</u>	<u>Initial Contact Date</u>
<u>02</u>	<u>3/2/93</u>	<u>RP letter</u>

(list additional on separate list and attach.)

LUST CASE PRIORITY SCREENING WORKSHEET

Page

HIGH FACTORS: (DEFINITION: Any case which presents an actual threat to human health, or has a high potential of causing a threat to human health and property; and/or any case which has caused or has a high potential of causing substantial impacts to the soil, waters and air of the State of Wisconsin:

- ☐ Contaminated private or public well >NR140 enf. std.
- ☐ Explosive or toxic vapors in structures
- ☐ Threat of fire

- HIGH OR MEDIUM FACTORS:** (write in choice of high or medium)
- ☐ Floating product (medium if no receptors within 1 mile)
 - ☐ Known gw contamination (private or public well <140 enf. std.)
 - ☐ Impacted surface water - wetland, trout stream, etc. impacted
 - ☐ Saturated soil contamination

MEDIUM FACTORS: (DEFINITION: Any case which does not appear to be an immediate threat to human health or vital natural resources but which shows levels of contamination that may cause substantial environmental impacts if left unaddressed.)

- ☐ Moderate (e.g. 100 - 500 ppm TPH) soil contamination with moderate potential for impacting groundwater.
- ☐ Impacted surface water - no critical habitat threats.

LOW FACTORS: DEFINITION: Any case where contamination has been documented, but which presents limited potential for any immediate threat to human health and vital natural resources.)

- ☐ Soil contamination (e.g. less than 100 ppm TPH) which appears to have a limited potential for impacting groundwater.
- ☐ Initial remedial action has substantially reduced environmental threat.

UNKNOWN FACTOR: (DEFINITION: Any case where some indication of contamination is present, but due to incomplete or inaccurate information the level of threat to human health or the environment can not be assessed at this time.)

- ☐ Inadequate information to assign a high, medium, or low ranking.

OVERALL RANKING: The screening rank for the site along with the date of ranking. This may be updated when additional information is received. Special circumstances for a particular case may be taken into account in the comment section. The District LUST coordinator may independently set the ranking of a site based upon "special circumstances."

Circle one & date, indicate in priority screening box opposite side _____ HIGH _____ MEDIUM _____ LOW _____ UN

Overall Site Comment:

NUMERICAL LUST SCORING WORKSHEET (Complete for LUST cases ranked HIGH)

1. **GROUNDWATER & SOILS:** (circle one)

POINTS

- 20 Municipal Well
- 18 >5 private wells
- 16 4 - 6 private wells
- 14 2 - 3 private wells
- 12 1 private well

SCORE

POINTS

- 8 Soil & gw within 1200' of a public well
- 6 Soil & gw within 1200' of one or more private wells
- 4 GW contamination, no wells within 1200'
- 2 Soil contamination

*For purposes of this scoring, private well includes any non-municipal water supply system.

2. **EXPLOSIVE OR TOXIC VAPORS:** (circle one)

POINTS CONFIRMED POTENTIAL

20

10

12

8

6

Explosive levels in a residence or building.

Explosive levels in a sewer or structure

Toxic levels in a residence or building

NOTE: Explosive levels determined to be >20% LEL as per an explosivity meter; toxicity levels are based on OSHA permissible exposure limits (PEL)

SCORE

3. **HYDROGEOLOGIC SETTING:** (circle one)

POINTS

- 12 Permeable stratigraphy (gravel, sand, fractured bedrock or utilities capable of intercepting and directing flow) and groundwater within 25 feet of the ground surface.
- 10 Permeable stratigraphy and groundwater greater than 25 feet below ground surface.
- 8 Moderately permeable stratigraphy (silty sands, silty gravel, clayey sands) and groundwater within 25 feet of ground surface.
- 6 Moderately permeable stratigraphy and groundwater greater than 25 feet below ground surface.
- 4 Impermeable stratigraphy (silt, clayey silt, sand clays) and groundwater within 25 feet of ground surface.
- 2 Impermeable stratigraphy and groundwater greater than 25 feet below ground surface.

SCORE

4. **TYPE OF PRODUCT:** (circle one)

POINTS

- 8 Gasoline, mixture of gasoline and other products, other light petroleum products.
- 6 Diesel, fuel oil.
- 2 Bunker oil, other heavy oils or waste fractions

Page 3

Responsible Party Name: _____ Responsible Party Name: _____
Address: _____ Address: _____
Phone: _____ / _____ Phone: _____ / _____

Consultant: _____	Consultant: _____
Contact: _____	Contact: _____
Address: _____	Address: _____
_____	_____
Phone: _____ / _____	Phone: _____ / _____

Amount Committed: \$_____ Amount Spent: \$_____ Amount Committed: \$_____ Amount Spent: \$_____

[illegible]

Additional Site Comments.

Lined area for additional site comments.